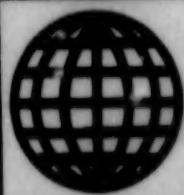


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19 January 1994



**FOREIGN
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JPRS Report

Central Eurasia

Military Affairs

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Military Affairs

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19 January 1994

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ARMED FORCES

Struggle for Control Over 'Alfa' Spetsnaz Unit

94UM0141A Moscow ROSSIYA in Russian No 49 (159),
7 Dec 93 p 8

[Article by Andrey Zhdankin: "The 'A' Team: Portrait Against a Background of Stagnation, the Putsch and October"]

[Text] "Alfa" was brought to light by the August putsch. Prior to that only a limited circle of people knew of the existence of the "A" antiterrorist group of the Security Service for Diplomatic Representatives of the Soviet KGB's 7th Directorate. The taking of hostages and aircraft and riots in isolation facilities and prisons were going on all the time. The vast majority of these incidents were indicated only in operational reports, however, since the level of glasnost corresponded to the "stagnant" state of the society.

The group's history goes back to 1974. At Yu. Andropov's initiative a special section was up for combatting terrorism. A similar section, the GSG-9, had been set up in the FRG slightly earlier, and it is believed that ours was established in response.

The storming of Afghan leader Amin's palace on 27 December 1979 was its first large operation, its christening in combat. The Soviet commandos carried out the extremely difficult, practically hopeless operation brilliantly. It is symbolic that the history of the antiterrorist group began with its employment as a political tool.

The "reverberating" emergencies—that is, those which received coverage in the press—include the seizing of an aircraft by a group of Tbilisi "golden youth", the rioting by criminals at the Sukhumi isolation facility, and Operation Grom, in which bandits in Vladikavkaz captured a bus carrying children, demanding and receiving an aircraft and money.

In each case the lives of many hostages hung by a thread, and it is thanks to the group's members that they were not killed. It was they who took part in the final phases of operations, when they would come under fire.

At the height of the restructuring they carried out assignments with other purposes: Baku, Karabakh, Vilnius, Tbilisi. These operations brought the group neither glory nor spiritual satisfaction. An order is an order, however, and Group "A" has always executed them with precision.

The Storming of the White House Which Did Not Take Place

"Alfa" was at the center of events in the August putsch, which shook up the state and the society. And although the secret services try to avoid publicity, the group was forced to come out into the open. The group's leaders were given good marks for their meetings with journalists, and numerous articles and interviews were published. Our citizens learned that we, like other countries,

have a powerful force capable of performing any kind of mission to squelch terrorism. We also had to acknowledge that the professional commandos could be used as a deterrent in policy. But then that is a matter of the political leadership's ethical purity.

The journalists have contrived many versions as to why the White House was not stormed. The three main ones: "the group supported democratic rule with all their hearts and absolutely refused to carry out the order"; "it was afraid there would be an enormous number of casualties, including some inflicted by the group" and, the last, "there simply was no such order."

There is something to all of them. The events in the capital were incommensurate in scale with either the Tbilisi or the Vilnius events, and they occurred on native soil. Everyone understood this. These circumstances altered the group's formerly unshakable guidelines.

The order to storm was given. Not in the usual, rigid form not subject to dissent, however, but somehow apathetically and not unequivocally. I repeat, everyone understood the scope and uniqueness of the situation. Those who issued the order were not overly insistent; those who were to carry it out temporized.

The group conducted reconnaissance and took other preparatory steps. The members were at their stations, completely equipped and in a state of readiness. There were no disputes over legitimacy on either side, just as there were none over the principles of democracy. Regulations and the oath are the fundamental law of the military.

The leaders and the old-timers in the group had long since outgrown the "Rambo syndrome" and were aware that the consequences (including casualties) would be unpredictable. According to one of the participants in the event, there was such a burden of responsibility on the group's commanders that they were drenched in cold sweat and their teeth clattered from the nervous tension.

Maj-Gen Viktor Karpukhin, group commander, arrived at the base a couple of hours prior to the beginning of the operation in an inebriated state. There was no plan for withdrawing from the White House following the storming, even though he was supposed to have worked out that part of the operation. A psychological breaking point apparently came at that time. The choice was made: We will not go. If someone from the KGB collegium had appeared—not to speak of someone from the GKChP [State Committee for the State of Emergency]—and demanded that the order be carried out... we would now be living under socialism with an unknown face.

The euphoria of emotions following August, frequently reminiscent of a striptease, in which people told and

showed that which should never be shown or told, faded, and "A" group went undercover once again.

Two years separated August '91 from the October events, and major changes took place in the group, just as in the nation.

The Line Before the President

Following the putsch, to prevent state security from becoming an uncontrolled force, foreign intelligence, the border troops and government communications were removed from the committee and made independent. Out of the 9th Directorate (Guard Service) was created the Main Guard Directorate of the Russian Federation subordinate directly to the President of Russia. Group "A" became an autonomous section of it.

The fate of the group mirrored that of the USSR in miniature. During the existence of a united Union the group had six regional subdivisions: in Kiev, Minsk, Krasnodar, Alma-Ata, Sverdlovsk and Khabarovsk. Cities most subject to disturbances (in the sense of terrorism) were chosen, also with a view to reducing to a minimum the time required to reach any point in the Union. The leaders of the new sovereign republics assumed jurisdiction over the local "Alfas."

Russian regional subdivisions were also soon "split off" from the main group and transferred to territorial administrations of the Ministry of Security. Up to that memorable August the group numbered around 500 "bayonets" (approximately half assigned to Moscow and the other half stationed locally), but only around 250 remained directly in "Alfa" following all of the "pruning." This has recently been increased, to be sure, and replenishments have been selected to replace departing "veterans."

The main mission of the special subdivision is to protect the President of Russia and other high officials. On all of his trips Yeltsin is now "watched over" not only by his own personal guard but also by members of the group. If, God forbid, there should be an attack, five men can form an "armored shield" around the President and protect him for 15-20 minutes, until his bodyguard can remove him to a safe place.

There is hardly any need to name the other individuals who are guarded, but this is certainly not going too far. Unlike the times of stagnation, the leaders today do a lot of traveling around the country and in foreign parts adjacent and distant. Given the great number of hot spots and rampant crime, many of them are targets for terrorists. I only have to mention Viktor Polyanichko, killed in Ossetia, and Viktor Kravchuk, an "Alfa" member killed with him. It is unquestionably to the credit of the group that the list of officials killed is small.

Even previously "Alfa" had guarded Soviet leaders and all of our first foreign visitors. This accounted for a small portion of its work, however, the main mission remaining that of combatting terrorism. Today, the members go off

on combat operations considerably less frequently and are obviously losing skills developed over the years, since only actual operations provide real experience. In addition, the "Alfa" members were regularly "broken in" during the war in Afghanistan.

Changing one's field of specialization is a painful process, and there were requests for transfer to other areas.

It is expensive to maintain the fighting efficiency of an elite, special subdivision at the proper level, and many specialists therefore consider the group's current status (guarding a comparatively small circle of people) to be unjustified. In prosperous Germany, for example, the GSG-9 antiterrorist team was just about disbanded and now has 100 fewer members.

Several major and minor events have occurred in "Alfa" over the past two years. The commander has been replaced twice. Following the putsch, Viktor Karpukhin was replaced at its head, and his deputy, Colonel Mikhail Golovatov, was appointed as the new commander. He spent less than a year at the new post. The true reasons for the replacement are not known, but according to one version—apparently the most reliable—one of his subordinates was found to be engaged in leftist activities. In the strict sense, his work was precisely according to the specifications of his job. Someone was caught and neutralized, but without the leadership's authorization and for separate pay.

Following Golovatov the group was headed by Hero of the Soviet Union Maj-Gen Gennadiy Zaytsev. This was a rare case of the official and the unofficial leader being combined into one. Gennadiy Nikolayevich is an unquestionable authority for his subordinates, since he is one of the people who founded the group and has himself taken part in numerous combat operations. (He headed the special section from 1977 to 1988). The members call him "dad" to his face. Zaytsev knows not only the first name and patronymic of each but also the makeup of his family and his family problems.

Coming under the public eye has had its negative and its positive aspect. Among the pluses was the first feature film about the group, "The Man From the 'A' Team." The positive thing is that the film even came out. It was fairly bad, a typical "myth."

The first book on the group, titled "Alfa—sverkhsekretnyy otryad KGB" ["Alfa"—The KGB's Supersecret Detachment], also came out. In the opinion of those who participated in the events, the book's main merit is its respectful treatment of these people.

The most emotional occasion was the group's meeting with President B. Yeltsin on the eve of the first anniversary of the August events. During its entire history no other national leader had met with the members.

At a training center in the Moscow area the most experienced of the members demonstrated the best of their capabilities: Hand-to-hand combat, the storming of

a building, an aircraft, a bus. The President held the weapons in his hand and inspected them but refrained from firing them.

What he saw made a powerful impression on him. He understood what might have occurred, had the group stormed the White House. Any doubts as to its ability to carry out such a mission were dispelled. Yeltsin presented the watch on his arm to the group's commander. The three other most distinguished masters of storming operations and hand-to-hand combat also received watches.

I shall let you in on a little secret. Like any group, this one has members of diverse "caliber." There are little people and heroes. This is determined in part by their specialization. The heroes are primarily storming experts, but the sniper or driver does not necessarily have to have broad shoulders. The most powerful of the fightingmen were selected for the exhibition.

When the President learned about the pay, he promised to raise it considerably. The actual increase only amounted to around 3,000 rubles. Right now, the group members earn only slightly more than the pay in similar sections of the militia and state security. It ranges between 150,000 and 200,000 rubles, depending upon length of service, rank and position.

One other event is worth mentioning. A year ago the Association of Veterans of the "Alfa" Anti-Terror Section was established. The veterans elected Colonel Sergey Goncharov, former deputy commander of the group, president of the association. Incidentally, he is now officially registered as a candidate for deputy in the Moscow City Duma. The association has around 250 members. The main goal of the unusual public organization, according to its president, is "to prevent the veterans from becoming lost in civilian life and to assist the families of those who have died." The association presently provides financial assistance to seven families each month.

Bloody Monday

October has not been a lucky month for Russia either at the beginning of the century or at the end. The events of October of this year are a dark page in our history. Compared with them the GKChP seems trivial.

There are more "blank spots," secrets and strangeness in the recent events than in the August putsch. They include the sluggishness of the Army, the inaction of the militia at critical moments, mythical snipers....

"Alfa" found itself once again at the center of events. Once again, just as two years before, the combat mission was the storming of the White House, but no such thing happened. There was a bloodless break-in.

At their own initiative officers in the group engaged in negotiations with the leaders in the White House. Two group members went with no arms or helmets to the hall

of the Council of Nationalities, where the main White House inhabitants had assembled. They informed the latter that they had the order to storm the building. They were aware of the bloodshed which would result, however, and suggested surrendering without a fight. They guaranteed all those who would lay down their arms and the unarmed a safe exit from the building and busses to haul them to the metro. To the extent that this was possible, group members did indeed escort those who abandoned the White House.

The "Alfa" members did not fire a single shot inside the parliament building. They advanced along the halls and stairs, shouting at the top of their lungs that this was "Alfa," that resistance was pointless and would only lead to bloodshed. The group members were also helping the wounded. Group member Gennadiy Sergeyev was shot at that time. The shooting did not come from the White House.

The journalists provided a fairly complete description of the external aspect of events, and, judging from indirect reactions, a fairly accurate one. Something equally significant remained off-camera. When the matter of storming the building first arose, G. Zaytsev, having learned from the experience in employing them in other than their special field, demanded a written order. This apparently had similarities with the misplacing of the blueprints for the underground communications of the White House. And so, the storming did not take place on the first "run." A spoken order had still been issued, however, and continued delay with its execution entailed a risk.

The people "upstairs" were very dissatisfied with the group and its commander. Rumors went around that "Alfa" was being disbanded. G. Zaytsev retired immediately following the operation. This was explained in the group as due to his state of health, but, in my opinion, it was more likely due to the sentiments of those in charge. The operation was most likely not conducted as expected. How should it have been carried out? Fabricating one's own version is like walking through a minefield.

The stick was then replaced with a carrot. Those who distinguished themselves were given awards; G. Sergeyev was posthumously awarded the title Hero; four people were awarded orders (eight were recommended), and many received medals.

In the situation which developed in which there appeared to be no choices, the group succeeded in saving face. Some perhaps do not like it, but it is a human face. Not even a part of the blood shed in the White House stains an "Alfa" uniform.

Life After "Alfa"

Because of the extreme circumstances of the service one year counts for a year and a half. People therefore retire young by civilian standards. The average age is 35. Their past does not leave them, though, but continues to

remind them of itself. The hearts of many give out, and they develop back problems. The enormous loads of many years make themselves felt. Just try running 100 meters in a heavy bullet-proof vest and a steel helmet.

Aleksandr Prokofyev died of a heart attack. Yevgeniy Pervushin lost his life last September, a few days after the operation (stomach ulcer). "Lost his life" is the right expression, because it did not occur on a hospital bed. Zhenya was traveling in his automobile, when blood rushed into his throat. He succeeded in stopping the vehicle, however, and requested that the group be telephoned.

If fate has protected one from serious injury or illness, though, one can begin a new life. Every member has a story for responding to the queries of neighbors: I am a custodian or an electrician. They can now say openly—retired. That is a minor thing, but it is nice. It is truly difficult for any person to pension out, but it is doubly difficult for a member of the special section with its extremely rigid discipline. It is not easy to become accustomed to the new life.

A few years ago there was almost no demand for specialists in a field like this in civilian life; the situation is different today. Banks, stock markets and commercial structures are glad to hire "pensioners" from "Alfa," because "Alfa" stands for quality. And correspondingly, there is a demand and a price for the specialists. A note to businessmen: If you want to hire one of the group's specialists, do not start out by talking about a salary of less than 400 dollars. You will not be taken seriously. A salary of 1,000 dollars is considered good. It can go even higher, to 1,500-2,000 dollars. Bankers, stock brokers and prominent businessmen pay this kind of money for a bodyguard. This category of people are exposed to greater risk, and people do not like to guard them.

Most of the veterans do almost the same kind of work in civilian life—in security services, guard and detective agencies. Some of them have attained high positions. Former "Alfa" members head the security services for the Imperial, Stolichnyy, Inkombank and Yakimanka-bank banks.

There are also those—few of them, to be sure—who have been successful in their own business. The original fund for the Association of Veterans was formed with their contributions.

Concluding Remarks

For the entire two years in which the group has been outside of the state security system there has continued an unseen struggle to gain jurisdiction over "Alfa." This is good, if objective necessity is the main consideration. In the meantime, there is plenty of work in their immediate field: Combatting terrorism and serious crime. The group could stanch the wave of the most unbridled crime. And sooner or later this matter will become urgent.

Voting Behavior of Military

94UM0143B Moscow KOMSOMOLSKAYA PRAVDA
in Russian 21 Dec 93 p 2

[Article by Aleksandr Kokhlov: "Army Votes, but Wordlessly"]

[Text] For whom did the Armed Forces vote in the past elections?

An answer to that question will apparently be slow in coming. All kinds of attempts to obtain information from Ministry of Defense election officials were fruitless. It has been determined that it is permitted to openly cite only two statistical facts: Ninety-five percent of Russian servicemen cast a vote, and 74 percent of them voted for the new Constitution.

Enlisted personnel and officers received no instructions as to whom to vote for, and there is no evidence of pressure exerted on the uniformed voters on the part of military authorities. Each person voted as he saw fit. Therefore, other than the two above-cited statistical facts, the military leadership does not wish to make any other disclosures.

According to a number of unofficial sources, many servicemen of the Black Sea Fleet, 201st Motorized Rifle Division stationed in Tajikistan, and the North-Western Group in the Baltics voted for the party of Vladimir Volfovich. Even the word "liberal," which is not well-liked in the military, had no effect.

Moscow Area 50 Percent Below Conscription Target

94UM0145A Moscow KOMSOMOLSKAYA PRAVDA
in Russian 21 Dec 93 p 2

[Article by Denis Baranets: "Capital's Sons Avoiding the Draft"]

[Text] The fall call-up was to bring 18,000 Muscovites into the Army. As of the present, less than half that figure has been realized. The call-up runs out in about two weeks. The outlook is such that Moscow will fall short of its supply of recruits. Even without that, the Army would be one million men below its goal.

The RF MO [Russian Federation Ministry of Defense] leadership, which is facing the threat of empty barracks in the near future, is applying increasing pressure. The MVD [Ministry of Internal Affairs] has also become involved in recruiting soldiers and sailors. In Moscow, for example, all supervisory personnel of the militia and the security service have been ordered to take a personal hand in carrying out RF Presidential Decree No 1573 on Call-Up. Chiefs of the UVD [Internal Affairs Administration] and the ROVD [Rayon Department of Internal Affairs] have for the first time become part of draft boards. Militiamen have organized routine call-up work in a manner typical for them, by carrying out several special operations in Moscow in the last few weeks. In a

special operation, military commissariat officers and militia members entered apartments targeted as housing draft-age youths under the cover of darkness, at about 6 am, with the purpose of catching the youths unawares, then allowing them 30 minutes to pack for the trip to the induction station.

To "do their part," some capital military commissariats resort to tricks. Thus, Sergey Detochkin in the Timiryazevskiy area was summoned for a preliminary medical examination and then immediately driven to the municipal induction station without even permission to contact his friends and relatives.

I asked Colonel Vladimir Dobrovolskiy, chairman of the municipal military commissariat, to comment on the Moscow call-up situation. He feels that the Presidential Edict's doing away with deferments for some draft-age youths is socially unjust. There have been cases of students bringing lawsuits against military commissariats on the grounds of illegal actions of the latter. Another unfairness has long been noted in military commissariats: Virtually 90 percent of the Moscow recruits come from the working class. Virtually not to be found are sons of commercial people, businessmen, bankers, and others.

Initial Evaluation of Quality of Contract Recruits

94UM0136A KRASNAYA ZVEZDA in Russian
22 Dec 93 p 1

[Article by Nikolay Poroskov: "Contract Recruiting: What We Have After the First Stage"]

[Text] In 1993, the Russian Army and Navy began the transition to a mixed system for the acquisition of manpower. In addition to conscripts for military service, soldiers, seamen, sergeants, and petty officers came to the units and subunits to fill positions under contract.

Who are they and will they become firmly established in the army? How viable is this development and can one confidently see it as a prospect for professional armed forces? In part these questions can be answered even today.

It all began with the government decree of 20 November 1992 "On Measures for the Gradual Transition to the Building Up of the Armed Forces of the Russian Federation with Service Personnel on a Voluntary Basis—by Contract." Afterwards the Ministry of Defense approved the corresponding provisional statute and program for the improvement of military service under contract through the year 2000.

The first preparatory stage provided for the development of a legislative and normative base and for the recruitment of 100,000 servicemen by contract. The second stage, through 1995, improves the system for the recruitment of volunteers and it is planned for them to fill 30 percent of the positions for privates and sergeants. And finally, by the

year 2000 half of the soldiers, seamen, sergeants, and petty officers are supposed to be professionals.

The forecasts with respect to the successful realization of the program for the first stage did not inspire optimism. This is something new, can we acquire that many people? This is what they worried about in the Main Directorate for Organization and Mobilization [GOMY] of the General Staff. But the task was accomplished as early as August 1993. In addition, in accordance with Article 60 of the Law of the Russian Federation "On the Military Obligation and Military Service," a significant proportion of extended-service personnel and servicemen performing service under legislation previously in effect will continue their military service under contract even this year. Thus, by 1 January 1994, one out of seven billets filled by privates, sergeants, and petty officers will be held by a person under contract.

The social cross section of those accepted for service under contract is curious: 46 percent came from the reserves, 37 percent were recruited from among those serving their military obligation, and 17 percent were women. Most—58 percent—are people 30 and under and 90 percent have a secondary education. A little more than half are unmarried, 63 percent of those who are married do not have housing space, and 20 percent did not previously serve in the army.

Overall they are worthy replacements. To be fair, however, we will note that the first stage of the recruitment, just as any new undertaking, did not proceed smoothly. People were sent to serve in rear services and in technical support to the detriment of the strength level of positions that determine the combat effectiveness of the units. Alas, personal interests do not always conform to the needs of the forces. The civilian speciality of the candidate is not by any means always taken into consideration. The low quality of the selection process—frequently without taking into account the opinion of psychologists, sociologists, and medical people—meant that the ranks included many casual people and today the Army and Navy are forced to get rid of them.

As an analysis shows, those signing contracts are attracted above all by material aspects. Apparently this is why volunteers are not very inclined toward professional development and this is the reason for the problems with discipline. Most of the past soldiers in compulsory service who went over to the new category have retained their old consciousness. But their situation has changed substantially: They are now receiving quite a lot of money and more freedom. They were not able to reorient educational work and the curve of instances of drunkenness and even crimes among contract personnel has risen.

Still, contract servicemen should be put in a separate category and one should take a different approach to them than to those in compulsory service. They are already isolating themselves into individual groups.

They are dissatisfied with service regimentation, with ethical and material incentives, and with the conditions of their recreation.

To this day there are no legally binding normative acts—statutes “On Those in Military Service” and “On the Material Responsibility of Servicemen”—that is, the norms for the interrelationships between volunteers and the command of units have not been defined. This, as has been stated in mobilization organizations, has exacerbated the problem of retaining contract servicemen. Indeed, the number of those breaking their contracts is rather impressive. And they break them without compensating the Ministry of Defense for a substantial loss.

The Ministry of Defense is analyzing the results of contract recruitment and is preparing recommendations for the forces. It has been proposed to the military commissariats and local commanders that they make a preliminary selection of candidates.

The leading scientific centers of the country, academies, and research institutions of the Ministry of Defense have been involved in the improvement of the system for bringing the troops and naval forces up to strength. A program of scientific investigations has been adopted. It will make it possible to organize contract service on a scientifically well-founded methodological basis and to avoid the errors made in the first stage. The question of supplemental contract recruitment in 1994 has been resolved.

The task of the transition to a professional army is not simple and its resolution frequently goes beyond the competence of the Ministry of Defense. It appears that a national program is necessary. In its scope, the Ministry of Social Security could help in the selection of candidates through population employment centers (bureaus) and the Ministry of Education could open branches of educational institutions so that contract personnel can obtain a civilian specialty—they will not be serving forever. In my opinion, other “power” agencies are also interested in such a program.

Whereas the state took the course of professionalizing the army, the Ministry of Finance and the Ministry of Economics must think about allocating specific budgetary appropriations to expand the construction of housing, to develop the infrastructure, and to eliminate the lagging behind of military personnel serving in Siberia, the Extreme North, and the Far East with respect to state money wages. But what about payment to physicians for the medical certification of candidates and compensation for the subleasing of housing? The sums are all considerable. Without supplementary financing the Ministry of Defense cannot fulfill its obligations to contract servicemen and it will not establish the conditions that prevent the breaking of valid contracts.

It appears that some of the problems that we have had in establishing contract military service have to do with the rapid pace of the resolution of this task. In the United

States, for example, they spent about seven years developing an analogous program. They first determined the magnitude of expenditures, established a network of recruiting centers, and conceived a system for information and advertising work. For the latter alone they spent \$280 million at that time. But we do not have even a ruble budgeted for advertising.

The introduction of a contract system not only alleviates the situation with respect to conscription but also sets the foundation for the future Russian Army and changes its face. And it is necessary to approach it as a matter of foremost national importance.

US-Russian Cooperation on Satellite Radio-Navigation Systems

94UM0152A Moscow KRASNAYA ZVEZDA in Russian
10 Jan 94 p 3

[Article by Col Aleksandr Volkov: “Glonass, Navstar, and Others”]

[Text] Recently, KRASNAYA ZVEZDA and other mass media have been talking in considerable detail about plans for cooperation between Russia and the United States in creating an international orbital space station. Readers of the newspaper are interested in knowing if there are other directions of Russian-American cooperation in the field of space. We are publishing an article by Colonel Aleksandr Volkov, candidate of technical sciences and specialist in satellite radio-navigation.

Satellite radio-navigation systems [SRNS] have combinations of accuracy, global coverage, and transmission speed that are unique for navigation equipment. It is not surprising that such systems find extensive application in military affairs and are also used for maritime and air transport. In connection with this, the commercial importance of satellite radio-navigation is also increasing. Domestic and foreign models of SRNS onboard using equipment were demonstrated at the International Navigation-92, Moscow Air Show-93, and other exhibitions and are widely advertised.

Four types of satellite radio-navigation systems are in operation today. Two of them are first generation. These are the domestic Tsikada and the American Transit systems. Two types of second-generation systems are also in operation: The domestic Glonass global navigation satellite system and the American Navstar system.

Originally, the Tsikada and Transit were designed for maritime navigation. They are still fairly effective in this area today. But they are not very well suited for controlling aircraft, spacecraft, and land transports: It is impossible to determine the speed of the objects. The accuracy of these systems also is not very high by modern standards—the maximum error of determining ship coordinates is 150-200 meters.

The second-generation Glonass and Navstar systems are free of these shortcomings. These systems are similar in

appearance and basic specifications and performance characteristics. Orbital subsystems assume the existence of 18-21 navigation satellites distributed evenly over three or six circular orbits at an altitude of approximately 20,000 km with an inclination of about 60 degrees. As a result, stable radio visibility can be provided by 5-7 satellites at any point of the system's operating zone, which is sufficient to accomplish any navigation task efficiently.

Second-generation systems have two channels for disseminating navigation information to consumers, differing in level of accuracy provided. Thus, navigation satellites in the Navstar system continuously receive signals on two frequencies, data to which is stored by means of two codes: A general-access "S/A" code and a protected "R" code. The undisclosed "R" code gives the satellite signals especially good measurement properties and ensures receipt of both frequency components of the signal. However, only military users are able to operate using the "R" code, as well as only a few civilian users licensed by the U.S. Department of Defense. The maximum error of determining coordinates is up to 15-20 meters, speed up to 0.05 meters/second, and time approximately 10 millimicroseconds. The characteristics of a signal received over a frequency encoded by the "S/A" code are considerably worse.

The Navstar system is presently deployed and provides continuous operational navigational locations at any point on the earth and in the near-earth space, including near space. During Operation Desert Storm, the United States and its allies used more than 5,000 Navstar user sets. Navstar information was also used during flight tests of ballistic missiles and for control of the Space Shuttle.

An inconvenience of navigational locations using the Navstar system on the territory of Russia involves the need to convert the data received into the domestic geodetic system. In addition, it should be taken into account that realization of the high accuracy characteristics of the Navstar system depends on the U.S. Department of Defense, which has jurisdiction over the system. Today, civilian consumers are serviced in the "selective access" mode, the essence of which involves intentional distortion of data transmitted from the satellites using the "S/A" code. As a result, the error of the coordinates can exceed 100 meters.

The beginning of the development of the Glonass system dates back to the 1970's. After the first Glonass-series satellites were launched (Kosmos-1413, Kosmos-1414, and Kosmos-1415) on 12 October 1982, the orbital subsystem continued to be built up at the rate of 1-2 launches per year. A limited orbital subsystem of the Glonass SRNS of 12-13 navigation satellites in two orbits has been functioning since 1991. This makes it possible to conduct virtually continuous global determination of two coordinates. It is also possible to determine three coordinates, but with time gaps (4-6 hours). In the next few years it is planned to bring the number of satellites to 24 (including 3

reserve satellites), which will provide continuous global three-coordinate determination.

The program for putting the Glonass system into operation assumes its international use together with the American Navstar system. Representatives from our country made corresponding proposals to the International Civil Aviation Organization [ICAO] back in 1988. The Glonass system's technical characteristics needed for production and operation of its user equipment abroad were also provided.

In principle, the Glonass system has the same capabilities as the Navstar system. But in connection with the lack of a "selective access" mode, it ensures better accuracy, at least for civilian users: the error of coordinates is in the range of 45-75 meters. An absolute advantage of domestic user equipment such as "Gnom," "Shkipper-N," and others is the additional capability for operating using signals of the Navstar system. This precludes the dependency of users on the information quality of each satellite navigation system separately. However, a relative shortcoming of the Glonass user equipment is the large weight, size, and power consumption, and the less-developed service capabilities compared to the American models.

So, the second-generation Glonass (Russia) and Navstar (United States) satellite navigation systems are reliable means of determining coordinates, speed, and time. The accuracy and efficiency of these systems can satisfy the demands of any navigation information users. In the near future, they will become the main means of coordinate and time support for geodetic work, control of air, maritime, and certain land transports, and matching frequency and time scales. Special emphasis should be placed on the fact that in the so-called "differential mode," both the Navstar and Glonass are able to ensure an coordinate accuracy of any user of no worse than 5-7 meters. The accuracy of determining the relative position of navigation objects will be even higher (up to 0.01-0.1 meter).

Joint use of the Glonass and Navstar satellite radio-navigation systems is quite a promising way to increase their effectiveness in the national interests of each of the sides and to expand international cooperation in the area of transportation, geodesy, and other branches.

POLICY

Impact of Russia's Financial Crisis on Military

94UM0138A Moscow KRASNAYA ZVEZDA in Russian
17 Dec 93 p 1

[Interview with Colonel-General Vasilii Vasilyevich Vorobyev, chief, Main Directorate of Military Budget and Finance, RF Ministry of Defense, by Ivan Ivanyuk; place and date of interview not given: "Simple Solutions do not Exist in the Financial Sphere"]

[Text] Colonel-General Vasily Vasilyevich Vorobyev: Born in 1946 in Gorkiy Oblast. Graduated from the Yaroslavl Higher Military School of Finance imeni General of the Army A. V. Khrulev in 1966, and from the Military Financial and Economic Faculty of the Moscow Financial Institute in 1974. Directed financial services at all levels—from battalion to district. Since 1991, First Deputy Chief and then Chief of the Main Directorate of Military Budget and Financing of the RF Ministry of Defense. Married, two children.

[Ivanyuk] Vasily Vasilyevich, finances have now become one of the most popular topics. Expressions such as "budget deficit" and "crisis of nonpayment" are forever in the newspapers. Moreover even the ordinary citizen is now closely following the foreign exchange rate and the rate of growth of inflation. What is this, the "rediscovery of money," as they said in the West in the 1950's?

[Vorobyev] At that time in the West, this expression reflected chiefly the development of the theoretical debate between the proponents of Keynesian economics—those who recognized the need for state intervention in the economy, and monetarism, a theory based on the requirements of free trade and entrepreneurship. Advancing the slogan "money has importance," monetarists gave a huge boost to the development of monetary research.

As far as our country is concerned, the problem of "economics and finances" lies on a purely practical plane. We are now attempting to go over to a normal economy—one in which everything is paid on the basis of market conditions, and in which we live within our means. That is, money occupies a fitting place in the country's economic life, and not just in it alone.

[Ivanyuk] "Monetarists" like Gaydar and Fedorov occupy key positions in the Russian government, and in general a rather rigid course has recently been followed toward financial stabilization, which is expected to stabilize the entire economy as well. Why do you think this goal was never reached?

[Vorobyev] It is true that the crisis in the economy has been long-lasting. The rupture of economic ties that had evolved over decades is having an effect. Monopolism has not been surmounted in the productive sphere. I can name many other factors, but perhaps the main one is the decline in the level of production. In this case, contrary to the usual scheme, it is proceeding on the backdrop of high inflation that threatens to develop into hyperinflation. I feel that in general, the government's position is the correct one in these extremely unfavorable conditions. But the ways being proposed for solving the problems we face are often very severe, if I may put it that way, including in relation to the armed forces.

[Ivanyuk] What are you referring to?

[Vorobyev] The Ministry of Finance is attempting to achieve stabilization mechanically, without providing

money even for the most urgent needs of the Army and Navy, and without taking account of social and other aspects. For example, defense appropriations approved by the 14 May 1993 Law of the Russian Federation "On the Republican Budget for 1993," amounting to 3,115,500,000,000 rubles, turned out to be twice less than the amount asked for by the Ministry of Defense, and in real prices it was less than a third of the minimum need of the Army and Navy. This law, and the decree regarding its enactment, foresee updating the indicators of the Russian Federation's budget system for 1993 with regard for the world dynamics of prices and wages, and for decisions concerning social protection of the population and state support to the sectors of the national economy. However, the inertia of this mechanism turned out to be too high.

The effort to determine the needs of the Ministry of Defense more specifically, which was started with the law's publication, is continuing to this date, because the price indexes proposed by the Ministry of Finance, which are the basis for estimate computations, are lagging behind the inflation rate, and are being continually revised. The Ministry of Finance continues to transfer appropriations to the Ministry of Defense on the basis of the indicators of the budget message prepared for legislative approval in July of this year and calculated in May-June prices. This document foresees allocation of only R6.3 trillion to defense this year, while as of this date the need of the armed forces has reached R9.5 trillion in current prices, according to the most modest estimates.

This is why our indebtedness in regard to deliveries of armament, military equipment, food, fuel, energy resources, clothing and other property, and services and jobs carried out in behalf of the Ministry of Defense is snowballing. This indebtedness is now above a hundred billion rubles, and with the present financing volume it threatens to continue into the following year, which at this moment is a total question mark.

[Ivanyuk] This year, it has also become commonplace for servicemen to receive their pay several months late in military units; in former times this was seen to be something extremely unusual, since after all, as a rule they don't have any other sources of income.

[Vorobyev] There are of course good reasons behind the complaints of servicemen addressed both to the Ministry of Defense and to the government of the Russian Federation. For that matter, it is no surprise that such complaints exist. Over the course of the year we were allocated around a third of what we really needed under the "Maintenance of the Army and Navy" section of the budget. Pay expenses, which are financed out of this section, represent 34 percent of its total. Thus the allocated resources would be enough only to cover pay, and only on the condition that these resources are transferred monthly in their full amount, because normative acts establish the requirement that all of the

armed forces are to be paid once a month over the course of approximately a single 10-day period—from the 13th to the 23rd.

Given the extremely grave economic situation, the Ministry of Finance has begun financing budget-supported institutions only at the rate of receipt of real income. As a result, for example, in November the Ministry of Defense had to open a credit six times—that is, once every 5 days on the average. And last month our main directorate had to provide financing 15 times. And then consider what it takes to transfer money to, for example, Kamchatka or the Far East. It takes banks 10 or more days to process the payment documents. Moreover, no one is interested in accelerating this process—more likely the reverse. A telegraph mistake and other technical sins could be used as excuses. And as a result, some military units wait months for their money.

[Ivanyuk] Despite all of this, the Deputy Finance Minister recently stated in a certain central newspaper that the Ministry of Finance is providing money on time and in the full amount, and that the Ministry of Defense is holding it back somewhere.

[Vorobyev] To be honest, I don't even want to discuss this incompetent statement. One need not be a financial wizard to know that even if the Ministry of Defense had a great desire to spend all of the appropriated resources on pay and allowances, this would be impossible. As concerns a number of allowances (for gas, electric power and others), money received by the banks is written off without acceptance—that is, without coordinating with the bearer of this money, even though there is a special government decree prohibiting such action. And as for some other forms of pay and allowances, the fines that are foreseen can be devastating to anyone.

In addition, we also need to pay for food and transportation services in order to maintain the viability of the troops. And in summer, Aeroflot stopped accepting military transportation documents because the Ministry of Defense has piled up an enormous debt.

But that's not even all. The fact that meager resources are allocated in relation to a number of expense items is having an effect not only on the military collectives, although they are the ones that are suffering the most. For example, we have ship repair plants that repair ships and submarines. Having no money, not only are they leaving their blue and white collar workers without wages, but also they are unable to pay taxes into the city budget. As a result the city has nothing with which to maintain medical and preschool institutions and other social facilities. That is, the policy being implemented by the Ministry of Finance is having a negative effect upon the population of the entire city as well. Such a situation has evolved in, for example, Petropavlovsk-Kamchatskiy. And consider how many large population centers there are in Russia, such as Severomorsk and Severodvinsk, where the Ministry of Defense makes a

decisive contribution to the city treasury. What's the next step—to pretend that they don't exist, to erase them from the map?

Similar problems exist in defense sectors of industry. Given that money is not being appropriated to pay for military products—it's been a long time since it has been appropriated in the needed amounts, enterprises filling defense orders are finding themselves in an extremely difficult position. Just today our main directorate received anxious telegrams—essentially cries for help—from the Gagarinskiy Svetotekhnicheskiy Zavod Joint-Stock Company and enterprises such as Tambovapparat, Reyd (Samara), Rubin (Moscow) and others.

Late settlement for delivered products is forcing the enterprises to turn to commercial banks for high-interest loans. In accordance with standards currently in effect, loan charges are paid out of the budget. As a result of this, the demand for appropriations necessary to finance state defense orders is doubling. Banking institutions, or to put it simply, businessmen are getting rich at taxpayer expense.

In this situation the Ministry of Defense has established a special commission to determine the priority directions of using the resources that are received. This commission is chaired by First Deputy Minister of Defense A. Kokoshin. However, even this measure hasn't produced the desired results. Because of a shortage of resources, and their receipt in small "portions," it is impossible to adequately solve any of the problems facing us, or even "patch" the obvious holes. Though of course, we have always felt that the most important thing is to pay people what is coming to them. The Ministry of Defense has now established daily control over paying off its indebtedness in relation to pay for servicemen and wages for civilian personnel.

[Ivanyuk] Nor can we ignore the fact, Vasily Vasilyevich, that the military collectives have been awaiting the whole year through for introduction of benefits foreseen by the Law on the Status of Servicemen, but many of them are still only on paper.

[Vorobyev] A number of the provisions of the Law on the Status of Servicemen were implemented right away. But unfortunately, they were not supported economically from the start, and it took longer than expected to develop the mechanism by which to implement the law. We are sometimes reproached for the fact that we introduced a restriction on the granting of interest-free loans for initial establishment of a household by servicemen at the time they sign their first contract. But were we to take what was written literally, and provide loans to all servicemen, including those who had served for some time before signing a contract, we would need over R1 trillion, and this is at a time when the whole military budget is just a little over R3 trillion. In this situation we decided to support at least those who had finished their studies in military VUZes, traveled to

their place of service in Russia or the CIS countries, and literally began with nothing. And even so, there wasn't enough money for this.

The Ministry of Defense drew up a plan for implementing the Law on the Status of Servicemen with regard for the real conditions and economic possibilities. Drafts of the documents were prepared and submitted to government organs, but no decisions on them have yet been made. It is also clearly evident in the matter that some structures, especially the Ministry of Finance, have been trying to covertly "torpedo" this law, so fundamentally important to the armed forces, from the very beginning. They weren't successful then, but they are still trying. The feeling we get is that no matter what problems arise, recently the Ministry of Finance has tried to resolve them at the expense of the Army. Moreover, attempts are being undertaken to rescind even those benefits which military people have enjoyed for many years. In this case when work is under way on certain documents, they agree with us that yes, such a norm should be contained in them. But then they write something entirely different in the final draft, without our consent. Everyone is now aware of the most recent draft, in which rescission of the benefit established for servicemen under which they are released from payment of income tax was proposed. The administration of the RF president had to come out publicly and refute the rumors that surfaced in regard to this draft.

[Ivanyuk] What has the Ministry of Defense done in these complex conditions in order to somehow rectify the financial situation of the Army and Navy?

[Vorobyev] First of all, the leadership of the Ministry of Defense and, of course, my subordinates are working very closely with government structures to defend our positions. We are devoting the most persistent attention to this because decisions are sometimes made in central economic bodies by people who may be competent and have good intentions but who know little of the life of the armed forces and have no understanding of all of the subtleties of our complex economy. Second, considering the dynamic nature of the situation in the economy, we have been using telegrams and the mass media to inform the troops of all decisions having to do with appropriations, with indexing of pay and wages, and with pensions.

Third, when it comes to finances per se, we have tried to use all possible internal reserves. Freed military property is being sold off through a specialized state cost-accounting enterprise, and the money is being used directly to solve social problems of the Army and Navy, although unfortunately the amount of this money is small. Other possibilities for obtaining resources are also being studied—for example ones associated with salvaging armaments.

At the same time, economic work has been strengthened in the troops, and strict economization practices have been introduced. Everything, beginning with training sessions and ending with troop combat training, is being subjected to financial expert examination. Regulations

governing the time servicemen spend in authorized duties and at the disposal of commanders are being introduced. Control over and punishment for mismanagement and waste have been intensified.

[Ivanyuk] Vasilii Vasilyevich, enormous amounts of resources exceeding the budgets of many countries, and hundreds of payment documents bearing numbers with lots of zeros pass through your hands. How do you feel about such a burden of responsibility?

[Vorobyev] When I make fundamentally important decisions, I try to take a weighted approach, and I seek advice from my subordinates. We work in close contact with other directorates of the Ministry of Defense and with the districts. If the need arises, we convene for consultation. I consult several times on the most important documents. Consequently it is sometimes insulting when certain mass media treat our work with such unusual lightness. And then they attribute this style, this lightness to us, asserting that it is with such a careless stroke of the pen, without any study, that the most difficult issues are resolved in the Ministry of Defense.

[Ivanyuk] Vasilii Vasilyevich, I have visited you several times, and noticed that you are in your office working at eight in the morning, and at nine in the evening as well.

[Vorobyev] That's the way it has to be. The times are such that when it comes to work load, workers of financial bodies have been "luckier" than others. But we are working primarily for people, and an understanding of this gives us the strength to go on. I am grateful to the personnel of the financial and economic service, and chiefly to our officers. Possessing the highest qualifications, they are not tempted by the advantageous offers from commercial structures, and continue to serve state interests, fulfilling their duty honorably.

Decline of Patriotic Education

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17 Dec 93 p 1

[Article by KRASNAYA ZVEZDA correspondent Aleksandr Kovalev: "The Raising of a Citizen, Patriot and Fightingman Begins in the Classroom"]

[Text] Once, long ago, almost in a different era, we sang a certain song: "Where does the motherland begin? With a picture in your primer...." It was a good song. It was loved by the young and the old, and they sang it with much feeling....

The old do not sing today. Our old people have no time for songs. They are absorbed in matters of daily life.

The young do sing. But they have different songs. "American battle, take me with you..." or, at best, "...let me go to the Himalayas. If not, I'll howl; if not, I'll bark...."

They do not like it in their native parts, you see. They sometimes even call it not the "motherland" but "this country." "We have become aliens. I am like an alien in

my native land," is their bitter paraphrasing of the already bitter lines of the poet.

There will probably be some who object to this, who will smile acerbically and say: There you go again, going off into nostalgia for the past.

I lament the primer which my daughter in the first grade does not have. Or rather, she has a primer, but it is not the same.

I began to feel regret at an exhibition. It is called "The Russian School." It is being held at the Russian State Library (the former Lenin Library). On display there for the first time are textbooks, visual aids and unique literature on Russian pedagogy, on methods of teaching and educating from the 17th to the 20th century.

There are exclamation marks in the guest book. The guests learn about a school which was considered the best in Europe. Over the past 70-some years it has endured all sorts of things. It has been subjected to destructive experiments and known times of exaltation.

At the end of the 1950's the book "Johnny Doesn't Know What Vanya Knows" became a best seller in the U.S. One of its authors was Admiral Rickover, the father of American nuclear submarines. After visiting Soviet schools, he returned to America in a state of alarm. In his opinion, the secondary and higher schools in the USSR were superior to those in the states and were the best in the world. John Kennedy went even further than the Admiral, stating that the outcome of the struggle and the Cold War between the USA and the Soviet Union would be determined in the classrooms of the two powers. The Americans began reorganizing. While prior to this around 4 percent of the national income had gone for education, the financing level was now raised to 12 percent or more.

We were also reorganizing. We lowered the level from 12 to 5 percent, and it is perhaps even lower today. An associate of Russia's Academy of Pedagogical Sciences recently stated on the radio that it faced the threat of closure. It lacked financing, and the state was not helping.

This is an Academy, the establishment of which was decided on in the fall of 1942.

The Soviet school was solid enough, but the breakup and restructuring have brought it to the point of a crisis. In our desire to eliminate all that was ossified and obsolete—as has often been the case—we became carried away and stopped only when the support structures had started to collapse.

In addition to everything else, it was decided at the time that the school should be "demilitarized. In order, they said, to prove that we were truly peaceful people and that our armored train was not even on a side track. They

replaced initial military training with the incomprehensible "Principles for a Life of Security." They undermined the heroic-patriotic education of the children, destroyed the link between the school and the army.

I see, the biased reader will say, that you military people are promoting your own thing again; you have your own, departmental interests in mind.

But these are common, national interests. In one form or another military-patriotic education of the youth existed in Russia from time immemorial.

France, Germany and America were not hesitant about adopting our know-how in the military-patriotic education of the youth. The GTO [Ready for Labor and Defense] system, about which we have already forgotten, became the foundation for youth health programs in many nations of the world, for example.

But we became carried away. Our outstanding diplomat Prince Aleksandr Mikhaylovich Gorchakov said that there had never been a case in world history in which a powerful army has existed together with a weak school system.

And it could be no other way, because the youth went from the school into the army, as they had gone from a lower to a higher grade. And new classes in new subjects began for them in the army. The development of courage, volition, valor and patriotism became the curriculum. The school centered around the personality of the teacher. In the army it was the officer. The one continued the work of the other.

And so the link, the continuity, is being broken. My personal opinion is that it is being broken also because our school has become feminized. There are no men in the schools. When the number of women in the school system in Sweden reached 8 percent, the society saw this as an impending national disaster. Steps were taken at the state level. The situation changed. And men make up only around 5 percent in our schools!

This means that we need to create a situation—moral, social and financial—which encourages men to join the schools. And it does not appear that this will be done soon.

Our school was then purged of "ideology." They removed the Pioneer neckties and the Komsomol badges from the children. They disbanded the detachments and squads. They began writing the word God with a capital letter and the word homeland with a small one. I have nothing against God, but I am bothered by the treatment of homeland.

They abolished the rituals. They changed the guidelines, but they did not outline or indicate the routes to new ones. And our children look for their ideals and idols in basements and driveways, among brokers and middlemen, pimps and dealers, grandstanders and petty stall owners.

As time goes by, our children are moving farther and farther away from the authentic ideals and real values. They are not out of sight, though, and we can still call them back. They will hear us. And the school is the key.

We need a new ideology in the educational and indoctrinational process in our school. It lies in the centuries-old spiritual order of the people, in our patriotic awareness, our cultural traditions, in our history. The school must be a place of creative understanding of life, of joyous discoveries. The school should be an institution which instills in the young generation a sense of sovereignty, pride in the fatherland and the deeds of our ancestors which elevates the soul, one which develops a sense of national dignity and shapes citizens and patriots.

And we should not be frightened by warnings against falling into nationalistic chauvinism. We will not. A truly dangerous environment conducive to the rise of nationalism or even fascism arises only when the national awareness and dignity are profaned, when patriotic sentiments are ridiculed.

Nikolay Mikhaylovich Karamzin was convinced that the state's history breaks down when there are no heroes left in it.

It is up to our children to continue that history, those children who find the word "Motherland" in their primer and wonder why it is written with a capital letter.

GROUND TROOPS

Description, Specifications of 2S5 'Giatsint'

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in Russian No 6, 1993 p 10

[Article by Engineer S. Fedoseyev, under the rubric: "Equipment, Weapons": "A 'Flower' From The Artillery Ordnance Park"]

[Text] The development of powerful self-propelled artillery pieces has been conducted in the USSR since the 1930's. At that time, the so-called "duplex" of heavy self-propelled artillery pieces appeared that included a 203.2 mm howitzer (SU-14) and a 152 mm gun (SU-14A) that were installed unshielded on a standardized chassis. During battles on the Karelian Isthmus (1939-1940) when the issue of combating a reinforced, deeply echeloned defense was urgently raised, they built a single model of a SU-14-Br2 with a 152 mm gun in a completely armored fixed turret. But work was halted after that and they returned to the development of a powerful self-propelled artillery piece only after the end of the Great Patriotic War. In 1949, they built, on an experimental basis, the SU-152 P with a 152 mm gun that was installed unshielded on the rear section of the vehicle on a specially developed chassis. Another variant—the SU-152—with the installation of the gun in a rotating turret, was built in 1965.

KB [Design Bureau] Plant imeni Sverdlov designers utilized the experience of these developments when they developed a 152 mm self-propelled gun in 1974 that was accepted into the inventory under the designation 2S5 "Giatsint" (the utilization of a "flower" designation for Soviet artillery systems has already become a tradition).

The 2S5 "Giatsint" is among a number of self-propelled guns with an unshielded gun mount on the rear section. Its chassis is a specially developed tracked armored vehicle. The engine and transmission are located in the forward section on the right side. The engine is a 12-cylinder, liquid-cooled, V-diesel engine. Its output is 520 horsepower. It has a mechanical, two-speed transmission. The gear box is mounted in one unit with a planetary swiveling gear. The driver-mechanic's seat is located to the left of the engine-transmission compartment. The crew commander is located behind him in the turret that towers over the hull. Seats for other members of the crew and a storage area for a portion of the basic load are located inside the hull.

The vehicle's armor is designed to protect the crew from small arms fire and from shrapnel of projectiles and mines. The forward glacis plate (30mm thickness) that is installed at a high angle of incline is capable of protecting it from the fire of small caliber automatic guns.

The drive train consists of the following on one side: Six twin rubber track wheels and four track support rollers. Hydraulic shock absorbers serve to dampen the hull's oscillations. The drive wheel is in the forward position. It has a linked, metal-shoe track with one drive ridge.

Now let's shift to the main portion of the self-propelled artillery piece—the artillery piece. The 152 mm gun is mounted on a rotating post that permits the conduct of fire from an angle of depression of -3° and an angle of elevation of up to +65° (that is, it can be utilized as a gun-howitzer). It has a horizontal sliding-wedge breechblock. A pneumatic leveling mechanism serves to level the rolling portion of the gun. A massive reactive slotted muzzle brake partially compensates for the force of the recoil. In the travel configuration, the gun's barrel is secured horizontally using a folding support. A channeled folding base plate with a servo drive that is installed on the rear of the vehicle serves as a support on the ground while firing. There is an additional base plate in the forward section (it collapses against the lower glacis plate in the travel configuration).

The crew utilizes a semiautomatic load easing mechanism with a trailer transport to reload the gun, without which this would be impossible (due to the large total weight of the projectile). It takes three minutes to shift the self-propelled artillery piece from the travel to the combat configuration.

The 2S5 is tasked with destroying enemy personnel and weapons, destroying enemy fortifications, and combating armored targets. In accordance with this, projectiles with high-explosive-fragmentation (conventional and rocket-assisted), shaped-charge antitank, and smoke

projectiles are part of its basic load. The rocket-assisted projectile has a small rocket engine that is turned on after it has left the bore, and which increases velocity and, therefore, flight range. A projectile with preformed streamlined submunitions (this increases the range of their dispersal and their destructive impact) is an interesting variant of a fragmentation projectile. The 2S5's maximum firing range is up to 27 km using a conventional projectile and up to 37 km using a rocket-assisted projectile. The rate of fire is two rounds per minute. A complete basic load totals 60 rounds. Thirty of them are carried on the self-propelled artillery piece itself and the remainder by the special transloader vehicle.

The self-propelled artillery piece has a 7.62 mm PKT machinegun (1,500 rounds) and a "Strela-2M" portable SAM system with a basic load of two SAM's for self-protection. The machinegun is installed over the vehicle commander's turret.

The 2S5's total weight is 27.5 tonnes; height—2.76 m, length—8.33 m, and width—3.25 m. The engine's high maximum output—18.9 horsepower per tonne—provides the vehicle with good mobility. Its speed is up to 63 kph and the range is 500 km. The vehicle can negotiate a ford up to 1.05 m in depth. The crew is 5-7 men.

As we can see, the 2S5 "Giatsint" combines high fire power—a primary indicator for a self-propelled artillery piece—with high mobility and adequate (for the conditions of its combat operation) armor protection. This permits the self-propelled artillery piece to efficiently provide effective fire support to formations at a great depth.

These are the kinds of "flowers" that grow in our artillery ordnance park.

It is useful to compare the 2S5 "Giatsint" with similar foreign equipment. The M107 175 mm self-propelled gun that is installed on the T249 special chassis with forward placement of the engine was accepted into the U.S. Army inventory in 1961. The gun is installed unshielded on a post in the rear section of the vehicle; it has an interrupted-screw breechblock, it is equipped with manual and hydraulic power vertical laying mechanisms. There is a lift and a hydraulic-powered projectile ram. It has bag-charge separate loading rounds with high-explosive projectiles (66.8 kg); the basic load carried is two rounds. Firing range is up to 33 km and the rate of fire is two rounds per minute. Weight—28.2 tonnes, crew—five men, engine output—405 horsepower, speed—up to 55 kph, and range—730 km. The M107's were replaced by M110 A2 203.2 mm self-propelled howitzers at the end of the 1970's—beginning of the 1980's. Besides the United States, the M107 was in the inventory of the armies of Great Britain, the FRG [Federal Republic of Germany], Italy, the Netherlands, Greece, Iran, Spain and Israel.

The GCT (F1) 155 mm self-propelled gun on an AMX-30 main battle tank chassis entered inventory in France

in 1976. The gun is installed on a high, completely armored turret and is equipped with a muzzle brake. There are manual and hydraulic drives for the elevation mechanism. The basic load includes projectiles with high-explosive-fragmentation (conventional and rocket-assisted), smoke, and illumination projectiles with totally combustible cases. The firing range of a conventional projectile is 23.5 km and of a rocket-assisted projectile—up to 30 km. The rate of fire is eight rounds per minute. A 7.5 mm antiaircraft machinegun has been installed on the top of the turret. Weight—41 tonnes, crew—4 men, engine output—730 horsepower, speed—up to 60 kph, and range—500 km.

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Description, Specifications of 'Igla' SAM

94UM0140A Moscow KRASNAYA ZVEZDA in Russian
17 Dec 93 p 2

[Article by KRASNAYA ZVEZDA Correspondent Nikolay Poroskov, under the rubric: "Arsenal": "A 'Needle' That Pierces an Aircraft"]

[Text] U.S. aviation began employing a new tactic at the end of the 1950's: Aircraft equipped with the latest equipment easily negotiated dangerous zones at low altitudes and could fly ground-attack missions against targets and bomb targets with impunity. The fact was that heavy surface-to-air missile systems were capable of operating against targets only at high altitudes. Our experts proposed a system of echeloned defense of targets that includes subunits armed with portable SAM systems. At that time, only the USSR and the United States were capable of producing the new weapon with its strict weight and size limitations.

Initially, contractors even terminated work due to its complexity and disbelief in realization but then defense industry leaders D. Ustinov and S. Zverev insisted on continuing the matter and provided financing. Every day, Chief Designer Sergey Pavlovich Nepobedimyy reported to "the top" on the progress of the work. The first models of the "Strela-2" portable SAM system that were produced at Kovrov Plant imeni V.A. Degtyarev were tested at a range. They sent the first shipment to Egypt at the request of that country's government.

They were stunned by the results of employing the "Strela": Six enemy aircraft were shot down by ten missiles in just one day in August 1969 at the same time that only four aircraft had been destroyed by Egypt's entire air defense system during a two-year period. "Strela-2" also demonstrated its high effectiveness in Vietnam.

A fundamentally new course in Ground Troops' air defense was laid with the appearance of portable SAM systems. The items enjoy demand on the world arms market. "Strela" has several modifications. "Igla",

which is also manufactured in several variants, became their logical development. The chief designer was Viktor Vorobyev.

The "Igl'a" SAM system with the 9K38 missile is designed to destroy low-flying targets (aircraft, helicopters, parachute flares, and cruise missiles) on head-on and rear-quadrant [all-aspect] courses under conditions of infrared jamming and with the target in visual range. The portable SAM operator is notified about the location and direction of movement of the target using a portable electronic plotting board. It also indicates the target's nationality: Friend or foe. It depicts four targets simultaneously.

During a launch, a solid-fuel launch motor is set into operation that pushes the missile from the launch tube. At a distance (no less than 5-6 meters) that is safe for the SAM operator, the beam igniter sets the sustainer engine into operation, which accelerates the missile to the assigned speed and maintains it. The missile's seeker head locks on to and automatically tracks the target based upon its infrared radiation. The seeker head, a

component of which is a photo receptor that is cooled by liquid gas, also generates guidance signals. They are transmitted to the missile's control surfaces through the autopilot.

The missile is directed to the most heat-contrasting elements of the target's structure, for example, to the jet engine nozzle exit section. But this area is not highly vulnerable for modern aircraft, especially for a missile with a small warhead. Therefore, the missile has been provided with a target point of impact center displacement scheme and the missile normally strikes the fuselage of the aircraft. It has a high-explosive-fragmentation warhead.

The primary type of fire is a head-on launch. The missile operator carries out the launch while standing or while on his knees, from a trench, from positions on the water or on swampy terrain, or from an armored vehicle that is traveling at a speed of not more than 20 kph. The missile's maximum launch angle is 70°—while proceeding from the physiological capabilities of the missile operator and excluding the impact of the launch engine jet on him.

Comparative Tactical-Technical Specifications of the "Igl'a" and "Stinger" (United States) Portable SAM Systems

	"Igl'a"	"Stinger"
Altitude of destroyed targets, m		
Maximum	3,500	3,500
Minimum	10	30
Maximum speed of destroyed targets, mps	400	340
Probability of kill of a target with one missile	0.35-0.55	0.3-0.5
Time to shift from the travel to the combat configuration, seconds	no more than 13 seconds	30
Missile launch weight, kg	10.6	10
Warhead weight, g	1,150	1,000
Maximum range of destroyed targets, m	5,200	5,500
Weight of the item in the combat configuration, kg	18	15.1

AIR, AIR DEFENSE FORCES

Col-Gen Miruk on PVO Reforms

94UM0159A Moscow VESTNIK
PROTIVOVOZDUSHNOY OBORONY in Russian
No 9, Sep 93 pp 1-3

[Article by Colonel-General Viktor Miruk, first deputy commander-in-chief of air defense troops: "Reforming the PVO: Problems and Conflicts"]

[Text] A number of fundamental changes directly affecting security have occurred under the political, economic and social conditions of most states. Currently existing approaches to attaining security have been clearly oriented on defining a probable adversary and then developing the entire system of strategic, operational, and tactical measures of preplanning and direct preparation of military activities on the basis of this

adversary. The level at which these measures were practically implemented depended on economic possibilities and the existing military danger.

Because of changes in the military and political situation, it is no longer possible to use the old methodological approaches of assessing existing and predicted future military danger, and then defining the adversary for the repelling of which the state's entire defense system is generated. We obviously need to base ourselves today on the idea that relations between states (coalitions) may be characterized from a military point of view by one of four states: absence of military danger, military danger, military threat, war. A potential, probable or confronting adversary arises for the state in the last three states.

Military danger is a state of relations characterized by the presence of historical conflicts between states or by the advent of new ones harboring the abstract possibility of war. A military threat is defined as aggravation of

interstate relations to the point of creating a high probability of the initiation of a war by a specific state (coalition)—the probable adversary.

What general conclusions can be reached after analyzing the modern military and political situation, and forecasting its development?

First of all the disposition of political forces in the world has changed, having transformed from bipolar to multipolar. Consequently attention in relations between states that had been considered to be probable adversaries after World War II has decreased somewhat, and the level of military confrontation has lowered. Nonetheless, although the external military threat has now been lifted (there are no probable adversaries), sources of military danger, and together with them potential adversaries, remain. Among them we can include states (coalitions) possessing armed forces capable of offensive actions and having openly expressed or unspoken claims upon other countries. Economically, politically and socially unstable states with leaderships that see war as a means of strengthening their regimes may also act as potential adversaries. This raises the probability of conflicts in certain regions, with subsequent escalation of military activities and their expansion beyond a regional framework.

Second, views of the military and political leadership of a number of developed states upon the goals and possible nature of military activities have changed significantly. Strategy and the creation of new forms of armament are oriented on fast and effective use of forces to quell suddenly arising conflicts. A process of decreasing the numerical strength of armed forces is beginning as a result. However, all nuclear countries feel it necessary to preserve not only sufficiently powerful groupings of nuclear forces, but also the capability for reestablishing military might necessary for a "big" war.

Third, because of the absence of large strategic groupings of ground troops in direct contact with each other in peacetime, the great amount of time, personnel and equipment that must be invested into their deployment, and the desire of the political leadership to avoid large human losses, the initiation and conduct of military operations in a new form—in the form of an air campaign—is becoming the most probable scenario. In this case the goal of such a campaign may coincide with the end goal of the war.

Considering the increasingly greater effectiveness of airborne offensive resources, and the ever-greater significance of their first strikes, it may be said that being first to act will not only ensure the seizure of the operational and strategic initiative but it will also decide the outcome of the war. On the other hand, retaking the initiative in the course of combat activities may be impossible even at the price of considerable casualties. Under these conditions covering the state against air strikes is a highly important strategic mission, and PVO [air defense] acquires new significance. Estimates show

that destruction of up to 50 percent of economic potential, chiefly the potential to produce power, places any developed country at the brink of catastrophe. The offensive capability of airborne offensive forces makes it possible to carry out these missions in both nuclear and conventional war, especially when a single state is involved. Therefore in addition to serving as retaliatory strike forces, PVO forces become decisive in deterring aggression. Weakness of PVO may provoke an aggressor to make surprise attacks even against strategic nuclear forces in order to weaken them to a level at which irreparable damage could not longer be inflicted upon the adversary by a retaliatory strike.

Thus the aerial phase of a war will most probably make up the principal content of its initial period. This raises the problem before military science of appropriately organizing PVO.

The traditional path is to raise priorities in financing, manning and mobilizational deployment, and in concentrating materiel reserves in PVO forces. However, a global military equilibrium (one including the PVO and SVN [Strategic Offensive Forces] of potential adversaries) cannot be ensured by this means under modern conditions.

Two directions of providing for military security are most realistic: deterring aggression beneath one's own nuclear umbrella or an umbrella maintained by an ally within a coalition, and actions to prevent or quickly contain regional conflicts. In either case a state (coalition) must be capable of anticipatory deployment of an armed force grouping sufficient to repel aggression, consisting chiefly of PVO. In this case PVO forces must be ready to effectively carry out the missions of covering strategic deployment of troops, attaining air supremacy, preserving the needed potential of the forces for a retaliatory strike, and providing cover to command posts of the highest levels and to key economic and public facilities against air strikes. A regional PVO grouping must be established by concentrating the efforts of air defense troops in the main directions of action by the adversary even before military activities begin, during a state of a military threat. This is possible within the framework of the state's (coalition's) unified PVO system. For this, it would have to have strategic and operational mobile reserve PVO forces by which a reaction could be offered to creation (build-up) of SVN groupings by the probable adversary, and the required materiel reserves.

PVO forces must correspond in their composition, organizational structure and the possibilities of their armament to the level of development and scale of the missions of the probable adversary's SVN, so as not only to repel the first and most powerful blows but also to inflict tangible losses upon the airborne adversary and foil his offensive air operation and air campaign.

But even a sufficient quantity of high quality armament and timely deployment and concentration of PVO forces

cannot themselves guarantee successful repulsion of aggression. Actions coordinated at the strategic and operational levels to repel SVN groupings at their bases, and to destroy the industrial capacities of their production and repair, and their reserves, would be required. In this connection the goal of reforming PVO would be to deter potential adversaries from an airborne attack, and in the event one occurs, to repel the aggression and keep military activity from escalating.

In our days, in order to reform PVO we need to give it some scientifically substantiated goals, and we need to formulate the missions, forms and means of activity in air defense in correspondence with state and departmental legislative and normative acts, with the limits of political, economic and social possibilities and goals of the state, and with the goals and missions of its armed forces. The particular conditions under which the given situation evolves, which also limit the actions by which the main goals and missions of PVO can be attained, as well as the organizational structure of the committed forces and resources, must also be accounted for.

Activities may be divided into strategic, operational and tactical depending on the goals, missions, scale and anticipated results. As a rule, the process of delegating decision-making powers culminates in legislative and normative acts of bodies of state government and in international acts pertaining to joint and coalitional groupings of armed forces. The most important thing today is to substantiate the goals, missions, and the necessary results of air defense activities.

The main strategic goal of air defense operations in peacetime is to create conditions ensuring, in the event of unannounced aggression, a guaranteed effective strike—both a retaliatory surprise counterblow and a retaliatory nuclear missile strike, and when aggression proceeds without nuclear weapons, attainment of the goals and the missions of strategic deployment in the initial and subsequent periods of war.

The main missions of strategic operations are: dependably revealing and providing timely warning of a missile and an air strike within an amount of time close to the flying time of ballistic missiles; reliably protecting strategic nuclear forces and the top levels of state and military administration against surprise air strikes; monitoring observance of the standard rules of using a state's (coalition's) airspace and outer space, and countering violations of them. Preparations must be made for the last mission with regard for the greater probability of provocative and terrorist actions employing aerodynamic and ballistic resources.

The principal missions may be carried out after first solving a number of problems: establishing the scientifically substantiated directions of technical policy in the area of development of PVO armament systems, and the theoretical concepts of the forms and means of air defense activities of forces and resources both during strategic deployment and in the initial and subsequent periods of war; realizing these concepts in the practical development

of the country's military might and in measures to preplan the first operations of the initial period of war; dependably revealing an immediate threat of airborne attack; making the composition, state and orientation of actions by alert groupings of PVO forces and resources correspond to the existing threat; achieving an adequate level of manning, and of the availability of effective armament, military equipment, fuel and other materiel. Also required are the appropriate level of personnel training; a base of standards governing military service; sufficient readiness for operational deployment of PVO forces; the appropriate quantity of mobilizational reserves of personnel, armament, military equipment and materiel for the deployment of major formations, large combined units and units; sufficient readiness of the operational organization of ground in relation to air defense.

During the entire period of a threat the main strategic goal of air defenses might be to maintain a correspondence between the conditions of their defense and the dynamics of this period in order to guarantee an effective retaliatory surprise counterblow or retaliatory nuclear missile strike, as well as timely strategic deployment of the armed forces. And in the period of a war threat—to make the composition and state of alert air defense forces and their command and control system adequate to guaranteed execution of the principal missions of the period of the threat; to achieve unity of the decisions reached by commanders-in-chief and commanders at operational-strategic and operational levels of troop command and control on activities of the forces pertaining to PVO missions in the first strategic operation to repel the adversary's air attack; to promptly deploy forces intended for action in support of air defense missions, and their command and control system; to promptly carry out the complex of strategic and operational measures to raise the viability and stability of force groupings, their command and control system, sectors of the economy and the population in the face of enemy strikes; to implement a complex of measures to mislead enemy reconnaissance.

In the initial period of a war in which nuclear weapons are not used, it is important to maintain air defense conditions making it possible to effectively use nuclear forces, to carry out operational-strategic missions of the first operations, and to gather forces and resources for subsequent combat activities. In this period the mission of the strategic leadership will be to continually update decisions regarding the first operation to repel an enemy aerospace attack, to prepare for subsequent operations, and to achieve unity in the decisions and actions of commanders-in-chief and commanders of operational-strategic and operational armed forces groupings committed to the operation.

The problems we have discussed are doubtlessly highly important to military theory and practice.

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PVO: Combat Training vs Personnel Shortages

94UM0159B Moscow VESTNIK
PROTIVOVOZDUSHNOY OBORONY in Russian
No 9, Sep 93 (Signed to press 10 Sep 93) pp 11-12

[Article by Major-General Pavel Provorov, Army deputy commander-in-chief for combat, moral/political training: "When There Aren't Enough People"]

[Text] Because of the continually growing shortage of personnel, it is becoming evermore difficult to maintain high combat readiness, and to ensure that the personnel have the skills necessary to carry out their missions. It is no longer possible to organize combat training in the form in which it had been foreseen by the old orders, directives and other guidelines. This is why we are directing our efforts in today's situation at two objectives—ensuring high individual professional training of officers and warrant officers, and crew teamwork and coordination.

It should be noted that individual training of all categories of servicemen, especially officers, still remains extremely low. How do we get them to work on themselves?

Unfortunately I am forced to assert that moral stimuli have practically stopped working. Material interest is now in solid first place, and it must be created. All the more so because commanders have all of the possibilities for doing so.

First of all we need to stiffen the requirements on rated specialists, and award class ratings only to those who really earn them, rather than making rating pay a unique form of material assistance. The time has come to introduce a stricter upgrading schedule. For example a school graduate is obligated to have a class 3 rating, and to confirm it before a unit commission upon his arrival in the forces [in an operational assignment]. A year later the officer must pass class 2, and a year after that, class 1, and if the individual fails to satisfy this requirement he should be given the minimum salary and a lower position.

Of course, not everyone need become a master of combat qualification. But this highest qualification does require the corresponding material incentive.

Upon transition to service on the basis of contract, it would be suitable to introduce stipulations regarding the professional growth of a specialist.

The personnel shortage that has come into being requires that we attain interchangeability in crews, and requires officers and warrant officers serving in administrative, motor pool, power engineering and other positions to know how to perform the responsibilities of members of combat crews. At the same time, the existing system of pay for class ratings permits payment of rating pay only within one's own military occupational specialty. The time has come to review this norm.

There is one other important issue. The time has come to reexamine the entire structure of combat training and to lay emphasis upon practical training, which helps to raise the occupational level of every officer and warrant officer. Combat crew training must be based on combat teamwork training, which should be carried out in the subunits (battalions) not less than once a week in the form of integrated training, in which both general and special training problems could be studied. Experience shows that other measures should not be planned on the day of combat teamwork training. Otherwise the training proceeds in disorganized fashion, in haste, or with some personnel absent.

It would also be suitable to appoint leaders for particular training subjects from among battalion deputy commanders (battery commanders). In this case they should not be replaced more often than every 2-3 months, so that they could study their subjects and the training procedures more deeply.

And most importantly, participation of all personnel in crew combat teamwork training, including in the daily detail, must be achieved. It will be sufficient to leave just a single orderly in the barracks.

And in order to save time, dry rations could be provided on this day for lunch, or lunch could be prepared in the field.

As far as preparation for the training itself is concerned, the lion's share of the time of command personnel often goes to drawing up all-too-many documents. Why not reduce the amount of planning documents to a minimum? Developing just a single plan should be sufficient for training. But at the same time, the necessary instructions, manuals and collections of standards must be available, and they must be used, rather than being mechanically transcribed into notebooks.

In the work of the crew, after individual training is conducted at the work stations, special attention should be turned to coordination and teamwork, to mutual understanding among members of the crew as one of the main prerequisites of fulfilling a combat mission.

The conditions under which training is conducted must be as close as possible to those of combat—that is, all kinds of interference must be utilized, nonstandard situations must be created, and the moral and psychological preparation of the personnel must be improved.

Training and simulation equipment of the command post of a surface-to-air missile battalion makes it possible for members of a combat crew to carry out individual training. Its weak point is that for practical purposes the target detection/designation officer receives no training. In addition only two types of group targets (a group of three and a tight group of three) can be simulated with a trainer, which is insufficient for the best training of combat crew personnel. These flaws in training quality could be eliminated by taking the combat crews to a training center, where a reasonably

good foundation for their training and coordination is established. A training center based on a computerized Tvertsa trainer makes it possible to create a complex and constructive aerial situation, and to simulate raids of any density, and all kinds of interference.

It is true that upon first arriving at a training center, crews often declare that it is impossible to work under these conditions. In the beginning they miss most of the targets participating in a raid. But after four or five training sessions, each followed by a critique based on objective data and scores put out by the computer, the picture changes, and the crews begin to work confidently under complex conditions.

This year the Tembr trainer, which has even greater possibilities, and which is simpler to operate than the Tvertsa trainer, was set up at the training center of the Moscow Air Defense District. This year the formations themselves should be receiving such trainers. Design of the Tembr trainer in a mobile version makes it possible to use it for exercises, for training, and to test the training level of crews right at the permanent stations of the battalions.

The Selena portable interference transmitter, which is available in practically every regiment, has also proven itself well.

Use of personal computers has a high impact. Software with which to train regiment command post crews and battalion command posts, beginning with the work station equipment and the performance characteristics and specifications, and ending with an entire set of tactical problems, was developed in the Military Command Air Defense Academy under the guidance of V. Gamov. Work on personal computers promotes rapid assimilation of the material, it provides for both group and individual training, and for self-study, while preserving the life of expensive systems to a significant degree.

Note that despite the shortage of personnel, such a training system made it possible for us to field well-trained crews in last year's PVO Forces championships from the unit commanded by Colonel N. Salakhov. By the way, they confidently took practically all first places. Officer N. Salakhov is now the combined unit's deputy commander, and his is training combat crews at division level. I believe that his experience will serve as soil producing good sprouts.

Let me say this in conclusion. Some commanders of combined units and units are lobbying for an increase in the duration of tactical exercises. I feel that this point of view is mistaken, because this would sharply reduce the coordination and teamwork of combat crews. Commanders would be unable to fully assess the training level of their units and subunits, and consequently, to determine the general orientation of combat training in the future, with regard for the personnel shortage.

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PVO: From Depoliticalization to Loss of Key Values

94UM0159C Moscow VESTNIK

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No 9, Sep 93 p 30

[Article by Lt Col Nikolay Pechen, candidate of historical science: "With What Do We Fill the Vacuum?"]

[Text] One question we are asking more and more often is this: How do we put a halt to one of today's dangerous trends—spontaneous politicization of military collectives? Whatever way you look at it, after all, fulfillment of the requirements of the army's depoliticalization has led to the reverse process. Breakdown of the old ideology and absence of a new one generated a political, ideological, moral and ethical vacuum that is now being filled with whatever comes along, under the influence of spontaneous processes of the transitional period.

Consequently it is no accident that the Main Directorate for Personnel Work of the Russian Federation Ministry of Defense conducted a survey of 1,100 servicemen of all branches of the armed forces, including the Air Defense Forces. Time has shown that trends revealed in the course of studying public opinion persist even today, such that I feel that it would be meaningful to discuss them.

Thus, data from the study reveal that a high degree of dissatisfaction with the moral and spiritual development of servicemen has developed in the army milieu. This is seen as one of the main reasons for the advent of negative phenomena in military collectives. Many servicemen are losing their social and moral reference points and values, and their confidence in tomorrow is dying away. The overwhelming majority of respondents feel that a vacuum has now formed in society and in the army, which is having an extremely negative effect on education, on mutual relations and on the morality of the young, who make up the majority of the personnel.

Under these conditions there is good reason why the following question is asked: with what do we fill this vacuum? How, and by what means do we educate the man in shoulder boards? How do we help the conscious citizen and soldier to preserve and strengthen his love for his fatherland, and national pride?

The country's history is called upon to play an important role here. This is confirmed by the results of the sociological study. Two-thirds of the respondents agree that patriotism should be instilled in the soldier by way of the country's history. Seventy-five percent feel that military-patriotic upbringing in the heroic traditions of the Russian Army must be intensified. Over 80 percent of the respondents are interested in the history of the Russian Army, although only one of every five knows it satisfactorily. Fifty-nine percent are interested in the history and traditions of the Soviet Army and Navy. Only 4 percent of the respondents are not at all interested in the country's history.

Over 60 percent of the respondents answered that they feel a personal need today for learning about the country's history.

While 36 percent of the respondents felt that the periodical press is the principal source of acquisition of historical knowledge, 28 percent chose television programs and 27 percent selected museums and exhibits. Only 5 percent named scientific journals and historical monographs. Historical problems are a topic of discussion among friends for 35 percent of the respondents, one of every three discusses historical problems at work, while 20 percent discuss them in the family. One of every four never discusses issues of the country's history with anyone anywhere. Twenty-six percent of the respondents feel that in recent years nothing has changed in the way the country's history is illuminated. Thirty-five percent are certain that such illumination has become one-sided. Thirty-eight percent assert that what is basically going on is slander of the country's history. Around 60 percent feel that while certain "blank pages" in history have been filled, other "blank pages" that are no less blank have appeared.

The greatest pride for the history of the country is evoked by the Great Patriotic War (75 percent), while the greatest interest is expressed in the prerevolutionary stage of Russia's development (35 percent). The period since 1985 evokes shame, disenchantment and even fear in 40 percent. Thirty percent of the respondents feel that the present stage of the country's history will not be truthfully reflected in the future.

The need for instilling patriotism through combat traditions and the history of the Russian Army was expressed by 62 percent of the respondents, while doing so through the traditions and history of the Soviet Army and Navy was elected by 38 percent. Only 12 percent suggest using the traditions and history of the revolutionary movement in Russia and the history of the development of socialism to instill patriotism.

Thirty-nine percent noted that they are well acquainted with the heroic traditions of the Russian Army, and 90 percent have a great interest in learning more about the Russian Army and its traditions, and about the Russian officer corps.

Study of the country's history is suggested as the basis for general humanitarian training (47 percent), with a fourth of the training time being apportioned to studying the traditions of the Russian Army. When asked what knowledge and what degree of knowledge are needed by the contemporary officer in humanitarian education, 90 percent of the respondents put study of the history of the Russian state first.

A complex process of rebirth of Russian statehood and the army is currently proceeding. Under these conditions we are returning to the great and, I'm very sorry to say, partially forgotten pages of the valor and military glory of the Russian Armed Forces.

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Electronics Maintenance: Impact on PVO Readiness

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No 9, Sep 93 (Signed to press 10 Sep 93) pp 35-38

[Article by Col (Res) Lev Fedorovich Oleynikov, senior scientific associate, All-Russian Scientific Research Institute of Radio Engineering: "The Dark Forest Around the Radar Station"]

[Text] Biography: Lev Fedorovich Oleynikov—colonel (reserve). Served in radiotechnical troops after graduating in 1956 from the Kiev Higher Engineering Radiotechnical School of Air Defense Troops. From 1970, deputy chief engineer of radiotechnical air defense troops, and from 1980, chief engineer and deputy chief of radiotechnical troops of the Moscow Air Defense District.

Defended candidate dissertation in 1967 without leave from service.

Lev Oleynikov has written and published five training manuals for air defense troops and VUZes [higher educational institutions], one monograph, and over 60 articles on problems of technical support to radiotechnical air defense troops. Received five author's certificates. Bears the honorary title "Republic Merited Efficiency Expert."

Currently working as senior scientific associate at the All-Russian Scientific Research Institute of Radio Engineering.

Modern electronics are being introduced into all troop command and control processes. Complex automated and cybernetic systems are being created. Their use in critical operating modes has made the combat effectiveness of armament and military equipment dependent upon technical condition and the manner in which their operation is organized in the forces. At the same time, development of the means of warfare, and in connection with this the possibility of surprise initiation of military activities, require the highest possible level of combat readiness of people, armament and military equipment.

As we know, high combat readiness of air defense systems can be achieved in two ways. The first—by developing a large number of units of armament while minimizing outlays on their maintenance (operation, supply, repair). This often results in a significant part of this equipment being in a state of limited combat readiness. The second—by deploying a limited quantity of armament and raising outlays on its current repair, as a result of which a higher level of combat readiness of this equipment is achieved.

Unfortunately the first way is the one followed in the practice of our troops. Even though specialists find it ineffective and wasteful. Especially in today's economic conditions.

But no matter how you look at it, and no matter what "strategy" you select, the technical support system has the main role in reaching the objectives of combat

readiness. Therefore, keeping the system of electronic resources working is becoming one of the main problems of their operation.

High operational readiness of electronic resources is achieved by the implementation of the corresponding measures during their planning and design.

As a rule, the mean time between failures and the mean restoration time, as well as the required level of failure diagnosis, are prescribed at the time the requirements on radar stations and automated control systems under development are formulated. The experience of operating electronic resources in the forces confirms that attainment of the prescribed indicators depends to a significant degree on the extent to which design principles regarding built-in monitoring and diagnostic systems are realized in the articles.

According to scientific research data the complexity of the structure of a built-in technical diagnostic system that can check functions and find faults must be not greater than 25 percent of the complexity of the electronic resources subjected to diagnosis.

These requirements are realized to a certain degree in most of the electronic resources that have been developed.

I should note that significant attention is also being devoted to this problem abroad. Thus the built-in monitoring system of the AN/SPS-48E radar station (USA) provides for detection of faults and their correction, and automates control over the technical maintenance schedule. Use of the built-in system has made it possible to reduce the daily time of checking the work of the radar station from 4 hours to 30 minutes. Even disregarding operational expenditures, the built-in monitoring system pays for itself by eliminating outlays on testing the units and the auxiliary and primary systems, and by reducing the amount of testing apparatus that has to be manufactured.

The experience of using built-in monitoring and diagnostic systems in radar stations and automated control systems that have been developed in our country shows that they need improvement. Especially as regards comprehensive testing and evaluation of the technical condition of the piece of electronic equipment as a whole, and expansion of the possibilities for diagnosing failures of circuit boards and cells. An insufficient level of automation and of dependability of monitoring processes is the fundamental shortcoming of these systems. As a result more spare parts and accessories are expended to restore the equipment than necessary, and their supply runs short. What is the solution? It would be to create external systems for monitoring the technical condition of electronic resources, and to widen the possibilities of built-in monitoring systems and automating the monitoring processes.

Self-contained technical diagnostic systems are an integral part of troop repair and technical maintenance resources in accordance with the established structure of the technical maintenance system. It would be suitable to

ensure that the principle of increasing complexity of diagnosis and repair procedures from the bottom up is fulfilled. To make it so that "fit-unfit" diagnosis would be carried out right at the facility. After which the faulty cells could be replaced in mobile self-contained diagnostic stations or, in the case of complex multiple-output small and large integrated circuits, using stationary diagnostic equipment in the workshops of units and at repair bases of large strategic formations (combined units).

Many factors affect the development of technical support resources. We can single out the following among them. **The complexity of third and fourth generation radar stations and automated control systems.** In recent years the complexity of electronic equipment has risen significantly. While radar stations adopted in the early 1970s contained up to 40×10^3 discrete components, modern radar stations have more than 400×10^3 such components. As armament grows more complex, the testing has to be increasingly more complete and detailed. The number of tests that have to be conducted on series-manufactured armament of the new generation has risen significantly. Thus, while over 300 parameters have to be measured when checking radar stations developed in the early 1970s, there are more than 600 such parameters in a modern radar system. Unautomated measurement using external measuring equipment has been the principal measurement method. This method requires taking the equipment off line for testing, during which it is not combat ready. The readiness coefficient of the radar station and the automated control systems decreases as a result as well.

The infrastructure of the troop repair system created in the early 1960s is now obsolete, while development of repair resources and modern procedures for third and fourth generation radar stations and automated control systems has fallen behind their delivery and development.

Absence of unification in diagnostic systems used by troop repair facilities of different levels. This problem can be solved by limiting the list of memory elements (cells) employed, making available a detailed catalogue of them, together with the circuit diagrams and diagnostic tests, as soon as possible, drawing up technical standards on the organization of diagnosis and repair of electronic resources, and unifying diagnostic and repair documents pertaining to each cell immediately upon its introduction into use.

Reliability of electronic resources and the permissible time of failure correction.

Discussing reliability evaluations, it should be noted that they are not always objective. For example, for some reason the reliability of only the main apparatus developed and manufactured by a particular enterprise is evaluated, without regard for systems supplied by associated enterprises. The mean time between failures is reduced significantly by the presence of all of the additional systems that determine the article's combat readiness. Thus given a mean time between failures of an

abstract radar station of 300 hours (without regard for complementary articles purchased elsewhere), when the reliability of the power supplies, the tower, and the radio relay station is taken into account the station's reliability is 78 hours to failure. If we also add in the reliability of the vehicles carrying the equipment (MAZ-500, KamAZ), the mean time between failures of a single system of such resources drops to 15 hours. Unfortunately in a number of cases reliability is not evaluated in this way out of administrative considerations.

The organization of material and technical support. The choice of system components subject to replacement (microcircuits, cells, modules, subunits, units), and the possibility of accumulating, storing and accounting for these components in the troop repair system affect the level of troop repair. The infrastructure of the material and technical supply system is organized according to a narrowly departmental principle, with regard for centralized control of the economy. Now, under the new economic conditions, it is unable to completely support prompt and high quality material and technical supply of the troops.

I feel that we need to give the deputy troop commanders for armament of the large strategic air defense formations the right to sign contracts with enterprises manufacturing electronic resources to manufacture and deliver spare parts and accessories for operational needs and troop repair. The cost of the work could be paid by the client.

Development of the technical support system imposes high requirements on the number and training of personnel in troop repair units and in radar station and automated control system combat crews. Unfortunately the number of specialists qualified to conduct diagnosis and repair is being reduced significantly because of a reduction in forces.

As I see it, this problem can be solved in several ways: by improving the methods of training specialists in the troops, putting more industrial specialists on the staffs of regional groups, making a transition to manning electronic equipment crews on a contract basis, and widening the possibilities of monitoring and testing equipment available at the locations of the armament systems themselves.

As far as combat training is concerned, we need to establish training centers for junior technical personnel. We need to deeply study the problems of technical support in institutions of higher education, and develop the textbooks and training manuals on these problems. We need to raise the prestige of technical occupations.

There is a need for taking a closer look at the current manning of technical subunits in the forces. According to the experience of the leading foreign countries, the personnel of such subunits represent up to 20 percent of the effective combat strength, and up to 30 percent in the air force and navy. Let me say for comparison that in our country, because of a shortage of personnel, the available

labor force of troop repair subunits of the radiotechnical troops is only 75 percent of what is required by the standards on operation of electronic equipment.

The impossibility of diagnosing and repairing complementary articles, radar systems and automated control systems purchased elsewhere. This is all because troop repair units lack diagnostic and repair devices. All such "articles purchased elsewhere" (power supplies and the means of controlling them, combat documentation devices and systems, air conditioning equipment, channel-forming and communications apparatus etc.) do not get any maintenance and repair. Furthermore, doing such work using diagnostic and repair equipment that has already been developed is often not foreseen. At the same time, the serviceability of this equipment limits the readiness of electronic resources. What is to be done? We probably need to consider the possibility of recruiting the enterprises that manufacture these articles to repair them and to develop the diagnostic and repair equipment. I see no other solution.

Creating a sensible combination of stationary and mobile self-contained repair resources has important significance. Use of stationary resources makes it possible to employ repair procedures of greater complexity. But in this case the cost of delivering the units to be repaired is higher. The search for a sensible combination of stationary and mobile resources must be conducted with regard for the actual distribution of the forces (the organization of the theater of military operations).

Unifying repair resources is one of today's most urgent problems. Unification of diagnosis, repair and technical maintenance systems must foresee reduction of the range of modifications of these systems. Use of electronic resources based on a single assortment of components is now making it possible to develop and employ a unified repair module. By expanding the possibilities of its employment, we can free resources for the development of diagnostic systems for radar stations and automated control systems.

Considering the complexity and the large number of stages of designing and developing diagnostic tests, in order to reduce overall outlays it would be suitable to use unified technical diagnostic systems during the manufacture and operation of electronic resources.

By combining these systems with a limited assortment of measuring instruments (signal generators, stroboscopic voltage converters, electronic frequency meters etc.) we can diagnose not only digital but also analog cells. Employment of unified diagnostic systems makes it possible to significantly reduce outlays on developing the software and the repair and diagnostic documentation. By doing these things, we can lay the foundation for designing diagnostic resources suitable for diagnosis of armament in all branches of troops.

Special emphasis should be laid on diagnosis and repair of damage. In the course of combat activities we will have to constantly maintain the needed level of troop

combat readiness by raising the rate of restoration of armament and military equipment.

Losses will typically occur with considerable nonuniformity with respect to the days of an operation, sectors of activity and elements of the troop operational organization. Dispersal of military equipment over sizeable areas will become a significant factor.

What peculiarities are anticipated in damage from combat?

First, multiple failures of components and cells. In this case the diagnostic algorithms will prove unusable because they are basically devised with regard for single instances of cell damage. Multiple failures may be caused by deformation of cabinets by a shock wave and mechanical damage to cells by flying fragments.

Second, damage to the life support systems of radar stations and automated control systems, making it impossible to operate them even if the electronic apparatus is still serviceable.

Third, significant mechanical damage to cabinets and systems situated at the sides of the trailer. It will take a considerable amount of work to check and resolder damaged plug connections.

Fourth, damage to what we are referring to as articles purchased elsewhere—electric power supplies and transporters—will make it impossible to evacuate damaged equipment to a collecting point. This will necessitate sending a repair unit to the damaged equipment. However, cumbersomeness and the significant quantity of required motor transportation could make the repair unit a vulnerable target to enemy aviation when it is on the move.

When using externally programmed diagnostic systems, we need to foresee measures excluding the possibility of introducing a virus into the diagnostic program. As we know, many countries are conducting intensive research on the combat use of computer viruses, because computerization of staffs, technical subunits and particular models of equipment is turning them into effective combat resources.

The problem of developing the procedures of restoring damage caused by combat is aggravated by the fact that the possibilities of sheltering vitally important systems and components are limited in relation to some types of electronic resources.

We can reach certain conclusions on the basis of the above.

The time has come to radically change the concept on the basis of which troop repair resources are developed. To design multipurpose, universal third and fourth generation equipment for diagnosis and repair of electronic resources. To determine the role and place of troop repair subunits and repair enterprises in peace and in war. To reexamine the main theoretical and practical

principles of technical maintenance of electronic resources. To design electronic resources requiring minimum maintenance. To begin operating electronic resources only within the limits of their useful life. To develop economically and technically substantiated norms and methods of technical maintenance.

A concept of material and technical supply of troops in peace and in war must be developed, sensible reserves of technical maintenance resources must be determined, and they need to be distributed appropriately through the forces. In short, we need to develop technical maintenance resources in all directions. This will be one of the most important guarantees of the combat effectiveness of armament and military equipment.

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Arctic PVO Ice Airfield Closed

94UM0144A Moscow KOMSOMOLSKAYA PRAVDA
in Russian 21 Dec 93 p 2

[Article by Igor Yelkov: "Arctic PVO System Shows Hole"]

[Text] Our fighter aircraft first appeared on Novaya Zemlya during the "Cold War." In the second half of the 1950s, the archipelago was shaken by the first nuclear blasts. The islands immediately attracted curious "tourists" and balloonists.

However, causing a major headache for the missile men, pilots, and radar operators were American bombers. We went quite a distance in an attempt to intercept the B-52s as far away from the mainland as possible. In fact, we went as far away as 1,000 kilometers into the Arctic. Thus, after an additional ice (!) airfield was created on one of the Franz Josef Land islands, it became possible for our fighter pilots to fly missions virtually in the North Pole area.

Just who was it that flew the Novaya Zemlya fighters, the aircraft that carried the image of a polar bear on their sides? Only aces. The pilots of the 641st Fighter Regiment never did include any lieutenants. Only 1st and 2nd class pilots were accepted.

Then, suddenly, the order: Abandon the airfield! The missile men also departed.

What had happened?

The reasonableness of stationing surface-to-air missiles and fighters hundreds of kilometers from the mainland was dealt a serious blow by the appearance of cruise missiles. Besides, it was not possible to intercept an aircraft before it could launch this kind of missile.

However, the fatal blow was delivered to the island regiments and battalions by simple failure to provide logistical support.

The decision to withdraw was made by the Minister of Defense after he made a personal visit to the archipelago. The regiments did not give up without a fight. Attempts were made, especially by the Northern Fleet authorities, to have the minister change his mind. The sailors were almost successful in convincing the higher military leadership that a lack of fighter cover would render certain of their missions more difficult of accomplishment. Interestingly, in the General Staff there was agreement with their arguments. However, ...

NAVAL FORCES

U.S. Sponsorship to Complete Varyag Suggested

94UM0135A VOYENNYE ZNANIYA in Russian
No 6, 1993 p 11

[Article by Lieutenant Colonel A. Pochtarev, associate with the Institute of Military History, under "A Look at the Problem" rubric: "America Gave Russia a Steamship"]

[Text] Ukraine does not need the heavy aircraft-carrying cruiser "Varyag" that is 70-percent complete at the production association "Black Sea Shipbuilding Plant" (in Nikolayev). Russia does need it but there are no funds to finance its completion.

What is the way out? The author proposes that we turn to history and seek one of the possible versions of the answer to this question.

Our history shows that two of our country's warships named "Varyag" were closely linked with the United States of America.

It was 1863. Two squadrons of warships simultaneously left Russia and headed for the shores of North America. In September 1863, for the first time in the history of the Russian Navy, a squadron under the command of Rear-Admiral S. Lesovskiy (6 ships with 167 guns, 172 officers, and 2,430 seamen) anchored in New York Harbor after completing a lengthy voyage from the Baltic. The squadron included the corvette "Varyag" under the command of Captain-Lieutenant. O. Kremer. And a Pacific Ocean squadron under the command of Rear-Admiral A. Popov (6 ships with 57 guns, 102 officers, and 904 seamen) arrived in San Francisco by 1 October.

Russian seamen remained on a friendly mission along the shores of America right up until June 1864, guarding its borders and ports through their presence. In so doing, the crew of the corvette "Varyag" distinguished itself. A fire took place while the crew members of the "Varyag" were in the city of Annapolis and they helped to extinguish it. The corvette was visited by the governor and congressmen of the state, who expressed their appreciation to the Russian seamen for their help. The sentiments of the Americans toward the Russians were most clearly reflected in the lines of the newspaper NEW YORK DAILY TRIBUNE, which wrote that Russia's

friendly behavior toward the United States during a difficult period in its history "will never be forgotten."

In 1898, a second shipbuilding program was undertaken in Russia for the needs of the Far East but because of the large backlog of Russian shipbuilding plants it was decided to place some of the orders abroad. After international bidding on a project for a cruiser with a displacement of 6,000 tonnes, the Naval Department gave preference to the American firm "William Kramp and Sons," which built the cruiser first rank "Varyag" in Philadelphia in a year and a half. It embodied the most advanced engineering for its time. It had rapid-firing guns, a central fire control system, a fundamentally new system to guarantee unsinkability, and a number of other innovations.

Within three years (9 February 1904), thanks to the feat of the crew in an unequal battle with a Japanese squadron at Inchon, the "Varyag" under the command of Capt. First Rank V. Rudnev was destined forever to remain a brilliant page in the military annals of the Russian Navy.

But Russian contracts with America in the area of military shipbuilding were not limited to the construction of the "Varyag."

From 1878 through 1917, the Russian Navy had 95 ships and vessels of American construction, including 1 battleship, 1 cruiser first rank, 4 cruisers second rank, 1 torpedo boat, 46 destroyer craft, 28 submarines, 5 hydrographic research ships, 6 messenger ships, and 3 other ships. In addition, the Russian Fleet was supplemented by one cruiser built in the United States and captured by the Russians from Turkey in 1915 and three submarines assembled in Nikolayev in accordance with American drawings.

From 1943 through 1945, under the Lend-Lease Law, the United States leased to the Soviet Union 459 warships and vessels, including 1 light cruiser, 28 patrol boats, 78 large submarine chasers, 79 minesweepers, 166 torpedo boats, and 47 landing ships. This was a significant contribution to the general cause of victory over the enemy.

After the war, one of the first Soviet Project 58 missile cruisers of the "Grosnyy" type inherited the name of the legendary cruiser "Varyag" and bore it for 25 years. It covered almost 200,000 miles of the seas and oceans, 12 times was declared an outstanding ship, the best in the Navy, was awarded the pennant of the Minister of Defense "For Courage and Military Valor," and took the prize of the Commander-in-Chief for excellent firing.

Now a new heavy aircraft-carrying cruiser, to which the name "Varyag" has been passed on, stands 70 percent complete at the production association "Black Sea Shipbuilding Plant." But work on it has been suspended since December 1991. There are no funds to complete the construction of the ship. With the collapse of the Soviet Union, the shipbuilders at Nikolayev found themselves in a critical situation. Ivan Vinnik, deputy general director of the production association, has acknowledged that Ukraine does not need the "Varyag." The Black Sea

is an inland sea and it is senseless to keep such a ship there. And whereas Russia may have a need for it, there simply are no funds....

Yes, Russia does need a new aircraft-carrying cruiser of the second generation. It presently has an acute need for precisely such ships to maintain at the necessary level the defensive sufficiency of a navy balanced with respect to the basic classes of ships and combat arms of the navy. It is already too late for Russia to recover the nuclear aircraft-carrying cruiser "Ulyanovsk," which they have begun to take apart at the building ways in Nikolayev for the same reason. But the chance has not yet been lost to "save" the "Varyag." And every way must now be sought to do this.

One of the ways out is to collect national monetary resources in a fund for the completion of the "Varyag." But the full planned cost of the ship (1992 estimate) has already reached approximately 3.5 billion rubles [R]. And although about R1.1 billion are needed to finish construction, this is a great deal for Russians, most of whom are already having a hard time in the present transition period. In the opinion of that same I. Vinnik, "it is necessary to find a sponsor-buyer who would finance the completion of construction...." It is apparent that this will be the most reasonable course.

And in this connection, taking into account the rather rich Russian-American naval traditions, it seems to me that sponsoring firms and business people in the United States of America could help Russia. Today, when our countries are not enemies but partners, according to the statements of the political leaders, such participation by American business in the fate of the "Varyag" will merely serve to deepen the process of cooperation outlined between them in the military area, especially since the first positive examples already exist. Representatives of the American firm Michael Masel are already working actively in the Pacific Fleet. The firm "Technogrid Group" has shown an interest in the construction of 30,000 apartments for the families of Russian military seamen in Sevastopol, St. Petersburg, Murmansk, Vladivostok, and Kaliningrad. The American company "Group Vector" is likewise close to concluding a deal for the purchase of Russian sea-based missiles. The circle of business partners is expanding. Is it possible that sponsors will be found for the "Varyag" as well?

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Pacific Fleet's Admiral Gurinov Interviewed

94UM0150A Moscow *ARMiya* in Russian No 17, 1993
(signed to press 25 Aug 93) pp 45-48

[Interview with Admiral Georgiy Nikolayevich Gurinov, Commander-in-Chief of Pacific Fleet, by journal *ARMiya*, occasion, date and place not specified, under rubric "Allow Me To Introduce:" "Russia Needs a Strong Navy"; photo of Gurinov included]

[Text] *The CinC Pacific Fleet answers questions from the journal ARMIYA.*

[*ARMiya*] Georgiy Nikolayevich, frankly speaking, you became commander in chief in a difficult period both for the Armed Forces and the Pacific Fleet. What do you see as your primary task in the new calling?

[Gurinov] To preserve the Fleet. First of all, as a minimum this requires not permitting a reduction in its combat readiness. Secondly, safeguarding cadres devoted to the sea while at the same time getting rid of ballast. And thirdly, changing the psychological mood in military collectives by establishing an atmosphere of mutual trust, a benevolent attitude toward people, and concern for them.

These are very difficult tasks, above all because the Fleet's financial and economic support has been disrupted. In June, for example, we were allocated just two percent of necessary funds. There is not even enough for pay.

[*ARMiya*] If it is no secret, with what did you begin your entry into the position?

[Gurinov] With a study of combat and mobilization documents, the status of Fleet formations and units, and the job qualities of leadership personnel, i.e., my closest assistants. One has to deal with a lot of administrative and economic problems in parallel literally from the first days.

[*ARMiya*] You had occasion to serve in the Pacific Fleet several years ago. In your view, what changed here in your absence?

[Gurinov] The changes that occurred unfortunately were not for the better in those three and one-half years when I was Black Sea Fleet chief of staff and then deputy CinC Navy. There was a reduction in the order of battle and a sharp deterioration in ship repair and in building up garrisons. There is an acute shortage of first-term seamen, and those who arrive are trained much more poorly than before. But it is gratifying that the backbone of officers and warrant officers deeply devoted to the Fleet and at times doing the impossible to maintain its combat effectiveness has been preserved.

[*ARMiya*] Your predecessor was removed from the position in connection with the tragic events at the Russkiy Island Training Facility. In your view, what was the main cause of the tragedy? What lessons have been learned?

[Gurinov] Above all I consider middle and lower echelon leaders—training subunit commanders and their deputies for work with personnel, company and platoon commanders, and medical personnel—to be at fault for what occurred. The tragedy played out before their eyes and they displayed criminal indifference, superficiality and callousness.

Approximately a month before what happened a large Fleet commission worked on Russkiy under the direction of Rear Admiral A. Stepanov, assistant CinC for work with personnel. It thoroughly studied the situation taking shape in the subunit, forecast the possibility of

serious consequences and submitted a very disturbing report to the CinC. Unfortunately, these documents subsequently did not get into the hands of those officials who were supposed to take emergency measures. As a result there were human victims and the health of many people was harmed.

On the other hand, what happened also had objective preconditions: decrepit barracks built back in Czarist times and an obsolete water supply system. Financing for winter preparation measures in that ill-fated year was late. Instead of March, money came to the units only in October, when the "white flies" already were in full flight.

[ARMIYA] Almost every commander today complains that it is practically impossible to organize scheduled combat training under present conditions. Do you have the very same problems?

[Gurinov] The very same. Crews are not at full strength, there is not enough fuel or engine time, and things are at a standstill in ship repair... Nevertheless, the combat training plan was 98 percent fulfilled in the first half-year. Essentially all ship-type training tasks were rehearsed and several exercises were held with quite good results. Judge for yourself: all minelayings, 90 percent of missile and gun firings and 80 percent of torpedo firings were fulfilled successfully. Moreover, in the winter training period we managed to develop several new tactics for employing Fleet forces. But all this of course came at the expense of an enormous strain on the personnel's physical and spiritual energies.

[ARMIYA] You have no fears that combatant ships might "moor up" for one simple reason, that there will be no one to serve on them?

[Gurinov] I hope this will not happen, although there is a shortage of people, just as there is, by the way, throughout the Russian Army. According to certain data, it is at half strength today. The situation in our Fleet is somewhat better—only a fourth of seaman and petty officer positions are vacant. But this relative well-being (against the background of other things) generates no special optimism. The spring call-up plan was only 40 percent fulfilled. There are serious complaints regarding overall training and physical development of every fifth young lad who arrived in the Fleet, and many draftees suffer from mental instability and are incapable to adapt quickly under difficult conditions of service. The low level of civic responsibility and weak receptivity to such concepts as patriotism and a sense of duty to the homeland are very troubling. Around a thousand persons are in hiding now. Eight percent of draftees have a negative attitude toward military service and the parents of every third one were against their "offspring" going into the Army.

We are attempting to compensate for these deficiencies through acceptance for contract service. I believe that the first phase of this campaign went rather well in the Fleet—we now have around 10,000 professionals,

including almost 3,000 women. Half of the men who signed contracts will serve aboard ships in positions as machinist's mates, electricians, and radar and other operators. Of course, the problem of manning subunits and units cannot be fully solved in this manner, but at the very least one succeeds in relieving its acuteness.

[ARMIYA] A difficult, one might even say paradoxical, situation now has formed in the Army with officer cadres as well. On the one hand, in connection with the reduction in the Armed Forces some officers are being made excess and are forced to take a discharge; on the other hand, many units experience a shortage of cadres, especially at the company level. Has your Fleet avoided this fate, as they say?

[Gurinov] Alas, I even would say that because of our specifics—remoteness of the majority of garrisons, severe climatic conditions, everyday unsettled state—the Pacific Fleet experiences this situation enormously more acutely than other fleets and districts. In midsummer it was only at 84 percent strength in officers. At the beginning of this year there were over a thousand applications in personnel offices with requests for discharge to the reserve. The primary motive is poor social protection and low pay. Around 400 officers called back their applications after the Supreme Soviet adopted the package of military laws, but still there are plenty who wish to be discharged ahead of schedule.

Honestly speaking, it is vexing to see young, competent specialists leaving. Naval duty always was regarded as prestigious, and if we wish to return this prestige, we must come up with a mechanism as quickly as possible for implementing laws concerning servicemen. Not one of them is in full force for now. This deprives people of prospects and engenders apathy and psychological tension in military collectives.

[ARMIYA] You of course have in mind above all problems of everyday social support to servicemen...

[Gurinov] Of course. Were we to solve at least half of them, many problems, including those connected with combat readiness, would fall away of themselves. Judge for yourself. Can we really expect a full return from an officer serving aboard ship when his wife is not working, one child is sick, a second one cannot be placed in kindergarten in any way, and the family lives in a room rented for a fantastic amount, where wind whistles from one corner and another drips? Like any normal person, all his thoughts will be about his loved ones. And it is still fine if the ship is in base, but when she is deployed?

Believe me, a sailor, such duty turns into downright servitude. People of the older generation love to say on this score that it was even worse in our time. I categorically disagree with such an approach—that was not why we steadfastly endured hardships and deprivations, so our sons would suffer them again. That is on the one hand. On the other hand, by condemning an officer and warrant officer to social survival, we degrade him and place him in the position of a second-class citizen who is

convinced by his living conditions that society does not need his services. A healthy, competent young person will not be reconciled with such a state of affairs and will get a discharge to the reserve. But who is to serve?

Therefore problems of social and cultural life are problems of preserving the fleet structure and its backbone, the officer corps. We now have almost 6,000 homeless for whom the Fleet will be unable to build housing completely on its own. Heads of administrations of territories where the Pacific Fleet is billeted also are incapable of paying off housing debts. Even the threatening orders of the President of Russia are impotent under conditions of the severe local budget deficit.

Or take children's health camps, for example. Previously there were six in the Fleet; now one on Kamchatka remains and the others are closed due to a shortage of funds. As a result we were forced to purchase more than one hundred vouchers to camps of other ministries and departments so that at least every third child with an acute need for a health-improving rest was able to get it.

What is needed to solve these problems? Above all sufficient, timely financial support to Fleet needs. As I already mentioned, in June it was only two percent, which went to pay for leaves and urgent TDY trips. It was necessary to suspend food and fuel procurements, winter preparations, and pay. The Ministry of Defense must speak out resolutely here and inform the government of our needs.

[ARMIYA] How is military reform going in the Fleet?

[Gurinov] This process began back in 1986 and above all consists of reducing redundant Fleet structures, removing obsolete ship classes from the order of battle, and achieving a balance in combat and supporting forces. The Pacific Fleet was reduced by almost 80 submarines and surface ships over the last decade. In the near future, under a ten-year comprehensive program for development of the Navy and naval shipbuilding, we will have ships of a new quality that are outfitted with the most modern precision weapon and control systems. This will increase Fleet mobility and its capability to perform any missions of defending interests in the Asiatic-Pacific region.

[ARMIYA] You already spoke of how to resurrect the past prestige of Fleet service. But forcing the laws to work probably is not the only way?

[Gurinov] Under conditions of state reorganization and political and economic crisis and in the struggle to obtain daily bread, we forgot about spiritual bread. Today being materially well off has become the chief yardstick of human value, and as a result the system of upbringing and education is being deformed and ideals and criteria of male dignity are being reassessed. Therefore a young lad does not consider it dishonorable to avoid military service by any method and go trade in humanitarian aid at speculative prices. And this is perceived as normal by his female contemporaries, who give preference to such a "businessman": you won't lose out in life with him, they

say. On the one hand, they can be understood: every person is the forger of his own happiness. On the other hand, why does he build his happiness by infringing on interests of the state and his fellow citizens? If you are supposed to serve, be so kind as to go serve, and only then choose your place "under the sun."

We have to urgently reconstitute a state system of upbringing based on patriotism and at the same time—again returning to the laws—put an end to a lack of legal limits. Everyone who does not fulfill his civic duties must bear responsibility for this, since impunity engenders permissiveness. But the state in turn also has to "give a little lift" in every way to the people who are in its service, create firm social guarantees for them, and propagandize their labor performed for the good of the homeland.

[ARMIYA] You have had repeated occasion to be on long naval deployments and not see native shores for several months at a time. It is understandable that at sea the life of every officer and seaman is scheduled by the minute, but you know there also has to be mental relief...

[Gurinov] Of course. Even machinery in which designers place a double or triple safety factor breaks. What does that say about a living person? Especially as a sailor on deployment must not simply perform his duties, but perform them effectively at a certain level of requirements. A plant lathe operator can permit himself to turn 20 parts today and ten tomorrow. But a watchstander has no right to do anything of the sort, since his slightest miscalculation may end up in tragedy. Therefore a good commander also must be an outstanding psychologist and be able to sense when his subordinates are at the limit of moral and physical energies. There is relief or a recovery period, as we call it, on any ship. I will go over the compulsory program, so to speak: viewing television broadcasts and feature films, reading books delivered by mail, listening to radio broadcasts... There is everything necessary for this on modern ships: self-contained television systems, film projectors, musical equipment, libraries, sauna baths. Unlimited time is given for leisure during anchorages and calls at our own and foreign ports, when watches are stood only at operating machinery: you can work out, tan on deck or go ashore. Despite all the complexity of shipboard life, it is very interesting and a person often finds a method of resting on his own. Sometimes this simply may be a conversation with a countryman whom you may not have seen in weeks.

[ARMIYA] The Fleet always was famous for its traditions. Which do you consider the most important today?

[Gurinov] All. All of them that originated over the course of Russia's age-old struggle for statehood and independence under the sky of Azov, Gangut, Cesme, Port Arthur, Tsushima, Odessa and Sevastopol... But still I

will single out patriotism, allegiance to the flag, professionalism, naval brotherhood and fleet culture. And for superiors of all ranks I will add closeness to people and informal concern for them.

[ARMIYA] Which stages in Russian Navy history do you consider most important?

[Gurinov] Those when the powerful Russian Navy was the support of an active foreign policy to protect the homeland's state interests. Above all I will name the era of Peter I and Catherine the Great, years of military transformations following the Crimean War of 1853-1856, and the postwar period of development of the former Soviet Union. Believe me, this is not at all a demonstration of pro-imperial sentiments on my part, but a display of healthy patriotism. One only need look at the chart and it will become clear that the destiny of a great naval power has been prepared for Russia by virtue of its geopolitical position. It simply is forced to have sufficient strength to protect its territories from maritime directions. This thesis hardly can cause sufficiently substantiated doubts, since it has been tested by many centuries of experience of many maritime states. No matter how irreversible detente processes on the planet appear, there is and will be competition, albeit in the economic sphere. And one cannot get by here without a strong tool, but one, I emphasize, with a defensive direction.

Today Russia needs a strong Navy in order to strengthen international security; participate in joint foreign policy actions of states of the world community; defend Russia's maritime economic zone, which now is being shamelessly plundered by fishermen of all contiguous states in the Far East; and participate in the fight against terrorism and piracy. The last mission is very urgent for the Asiatic-Pacific region, on whose seas more than ten Russian vessels have been subjected to piratic attacks since the beginning of the year.

[ARMIYA] Which Navy historians do you prefer?

[Gurinov] Feodosiy Fedorovich Veselato and Academician Yevgeniy Viktorovich Tarle, whose works not only have a cognitive, but also an applied nature, are of interest to me.

[ARMIYA] You have a long and difficult career behind you. If it is no secret, what is the source of your envious energy and working capacity?

[Gurinov] I would not begin to raise any of my professional qualities to a certain power. I will say this: I am moved by love for the sea and a fervent desire to see Russia again in the rank of a great naval power.

[ARMIYA] If you were asked to draw up a collective verbal portrait of the professional navyman, which qualities would you note above all?

[Gurinov] These qualities are named in Admiral Stepan Osipovich Makarov's work "Rassuzhdeniya po voprosam morskoy taktiki" [Dissertation on Questions

of Naval Tactics], which is timely even to this day. A sailor should possess health, stamina, addiction to discipline, addiction to the sea, boldness, and knowledge. To these I would add one of General Dragomirov's requirements of the soldier in war, specifically "a sense of duty taken to selflessness or to readiness for sacrificing himself in coming to the rescue of a comrade," plus, based on the specifics of today, human tolerance and a high level of culture.

[ARMIYA] Tell us, please, about your family.

[Gurinov] My wife, Nadezhda Ivanovna, is a teacher by profession. My son, Oleg, completed Kaliningrad Higher Naval School in 1989. Now he is a senior lieutenant and head of a department on an ASW ship. My son's wife Larisa is raising a grandson for me who was born on the same day as I, 27 August. I hope he too will become a naval officer. This will be the fourth generation of Gurinovs in the Armed Forces.

[ARMIYA] Thank you for the conversation.

From the Biography

GURINOV, Georgiy Nikolayevich, born 27 August 1939. After completing Caspian Higher Naval School in 1960, served four years in Strategic Missile Troops units. In 1964 appointed commander of a SAM battery on a Baltic Fleet surface combatant. Was executive officer and commander of a destroyer, chief of staff of a missile craft brigade, commander of a destroyer brigade, and chief of staff of a missile ship division in the Baltic Fleet.

Finished Naval Academy in 1975 and General Staff Military Academy (with honors) in 1984. Further served in positions as chief of staff and CinC Kamchatka Naval Flotilla. Chief of staff of Black Sea Fleet and deputy CinC Navy from 1989 through 1993. Appointed CinC Pacific Fleet on 1 April 1993 by Russian Federation Presidential Edict.

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Improving Support to Fleet in Light of Reforms

94UM0114A Moscow **MORSKOY SBORNIK** in Russian No 9, Sep 93 (signed to press 7 Sep 93) pp 33-37

[Article by Vice Admiral V. Yerebin, deputy Commander-in-Chief of the Navy, under rubric "Questions of Theory": "Ways To Improve Support to Naval Forces in Light of Military Reform"]

[Text] It is common knowledge that Russian Armed Forces organizational development is to be carried out in stages on fundamental bases of the concept developed by the Russian Federation Armed Forces General Staff.

In the first stage (up to the end of 1993) existing arms and military equipment are being inventoried and the status of Russian troops located outside the state is being determined at an interstate level. At the same time, the

scheduled withdrawal of large strategic formations and formations from other states, their settling in, and a reduction in numerical strength of personnel and in the number of arms and military equipment to substantiated sufficient amounts continues. Developing a legal base for organizational development and functioning of the Russian Federation Armed Forces and reforming certain military districts and fleets are the priority tasks of this stage.

In the second stage (up to 1995) it is proposed to form mobile forces and establish troop groupings meeting the actual and forecast military-political situation and Russia's treaty obligations while retaining the existing branch structure and command and control system. Careful attention will be given to groupings of strategic nuclear forces. Such table of organization transformations will require a substantial revision in military-technical policy, including the weapon and military equipment orders and procurements system. In this same period it is planned to shift to a mixed Armed Forces manpower acquisition system based on the draft, volunteer contract service and introduction of alternative service (at the desire of draftees).

In the third stage (after 1995) it is deemed advisable to radically change the Armed Forces structure and the military-administrative division of Russian territory while simultaneously updating and delimiting operational and administrative command and control functions. This will require revising the tasking and missions of present branches of the Armed Forces, bringing their numerical strength to 1.5 million servicemen, and radically transforming the structure of command and control entities.

We too have developed a draft reform concerning questions of support to the Russian Federation Navy. It provides for gradually bringing the entire logistic and engineer support system to a qualitatively new organizational and technological level capable of ensuring the Russian Navy's constant high combat readiness. With today's very difficult economic relations dictated by the transition to the market, it is possible to attain this goal only on the basis that the new logistic and engineer support structures ensure maximum continuity of everything positive from presently existing structures and also from approved principles and methods of employing the rear and engineer units.

In the course of this work we have to make a detailed analysis of all aspects of Navy support and functioning at various echelons: reject something, modernize something, and introduce new things to something with consideration of today's conditions and prospects of military reform.

Questions of support to naval forces are being resolved basically by the Navy Rear and Main Engineer Directorate. Being a component part of the Armed Forces Rear, the Navy Rear plays the role of a connecting link between supported forces of fleets and the country's economy. The mission of logistic entities includes receiving physical assets

(equipment; food; clothing, technical and other property) from the national economy, accumulating and storing them, promptly delivering them to naval troops and forces, and satisfying their needs promptly and completely.

The importance of the Navy Rear in the present transitional period of Armed Forces development is growing steadily. Based on the situation taking shape in the country, the following can be singled out as principal directions in improving the rear's structure and quality of functioning:

- practical transition to planning and organizing logistic support based on establishment of a territorial system of forces and assets both in peacetime as well as in a special period;
- further improvement of combat and mobilization readiness of logistic entities with consideration of the defensive direction of military doctrine, prospects for Russian Armed Forces development and the economic situation taking shape in the country;
- increased quality of support to forces through mastery of advanced logistic support methods, development and rational use of the rear's material-technical base and a growth in professional training of personnel;
- development of logistic support management systems (with introduction of automation and communications equipment complexes).

In short, reform of the Armed Forces and the Navy directly affects essentially all spheres of activity of Navy logistic entities. In our view, special attention should be given to the problem of functioning of a territorial system of logistic support to naval forces (troops). The importance of its priority discussion is dictated above all by the fact that the territorial system fits most integrally into the conceptual outline of Russian Federation Armed Forces organizational development under conditions of a reorganization of the structure of the country's economic base, abolition of many ministries and departments, creation of new economic structures, and modification of ties of Ministry of Defense directorates with industrial enterprises. New approaches to this problem also are dictated by purely military aspects: a change in the military-administrative division of Russian territory; possible formation of territorial commands; creation of mobile forces and also accordingly areas of their comprehensive logistic support; transition to a new system of Armed Forces manpower acquisition and so on.

Speaking of a practical transition in the work of planning and organizing logistic support to naval forces based on establishment of a territorial system, we will explain that what is meant is a fixed military economic base and local economic base located in a separate area (region), joined by a unified management with an appropriate level of economic and administrative independence and intended for autonomous and uninterrupted logistic support to naval forces in peace and wartime in their assigned zone of responsibility.

If we trace the development of the Navy Rear for its entire period of existence (over 290 years), it can be said that it was basically centralized, i.e., it had a structure that "commanded" that comprehensive support be accomplished. For a long time a system of military ports, one of which was the main one, made up its basis in the Russian and Soviet navies. The structure of the military port was not purely logistic. It was headed by a line admiral or officer whose functions also included organizing defense and security of the port area from sea and land. The port included 12 sections including gunnery, mine-torpedo, chemical, communications, technical, clothing supply, food and forage supply, transportation, floating craft and harbors, and production enterprises sections and billeting and sanitation departments. The port was fully responsible for supporting ships and units at the basing location and on sea deployments.

In 1936 a system of naval bases was introduced in the fleets in whose structure the combat and logistic functions of previous ports were divided. The naval base commander and staff began to perform missions of combat tasking, and the military port was preserved as a purely logistic entity. The military port commander was deputy commander of the naval base for rear.

In 1941 the "Statute on the Fleet (Flotilla) and Naval Base Rear" was approved and a unified entity, the fleet rear headed by the fleet chief of rear, was introduced. Two years later naval defense districts were established in the fleets which combined several naval bases in their makeup. In the newly established structure, the rear was given the mission of supporting nearby formations and units as well as naval bases included in the naval defense district. Thus, three naval defense districts—Tallinn, Riga and Southwestern—were established in the Baltic Fleet during 1944-1945. Each included 2-3 naval bases.

In addition to naval bases, the naval defense district makeup included formations of surface ships and of naval aviation; coast defense, air defense and naval infantry units; and the rear. Naval base rears were subordinated to the naval defense district chief of rear in a special sense.

Establishing naval defense districts permitted better organizing the interworking of different forces under conditions of combat operations and successfully performing assigned missions, and it simultaneously relieved the fleet command, staff and rear of numerous problems. Naval defense districts were abolished in the postwar period. Fleets began to be transferred to new structures, the basis of which were naval bases. Fleet logistic sections based on a territorial principle met the territorial principle of support in the Navy to the greatest extent.

Thus, the regional (territorial) principle was taken as the basis in organizing logistic support in all stages of fleet development. As shown by war experience, that configuration of the rear and of technical support entities was optimum and permitted fleet forces to perform assigned

missions under conditions of full autonomy, without disruptions and within prescribed time periods.

Logistic support missions of fleet forces presently are performed by rears of mixed force formations and naval bases, by fleet logistic sections, and by logistic support areas established relatively recently (in 1988), which have in their makeup basically the entire complex of necessary bases, depots, units and establishments. The experience of functioning of the Baltic and Liyepaya logistic support areas for the last five years and conduct of experimental exercises permitted concluding the fundamental need to further develop theory and practice as well as introduce a territorial system in the Navy with great powers granted to regional logistic entities for concluding direct contracts for delivery of supplies and for increasing responsibility for performance of their assigned missions.

The principal advantages of logistic support areas over other logistic entities are as follows:

- possessing sufficient fixed depot capacity, they are capable of fully performing missions of supporting fleet forces and units of other branches of the Armed Forces and combat arms on a territorial principle;
- stores of supplies permit autonomous support to fleet ships and units in the operational zone of responsibility for their conduct of combat operations for a specific period of time;
- logistic support areas are directly subordinate to the chief of fleet rear, which reduces the multistep nature of leadership and facilitates providing forces and troops with stores;
- survivability of command and control of the fleet rear as a whole is improved and, if necessary, functions of its command and control entities can be assumed by the rear services command and control facility of logistic support areas.

The possibility of effective support not only to permanently based formations and units, but also to arriving ships and vessels of other fleets is an indicator of no small importance regarding the advisability of the logistic support area structure.

With consideration of what has been set forth, a further structural change in fleet logistic entities is proposed by removing them from subordination to corresponding flotilla (naval base) commanding officers (commanders) and establishing logistic support areas with key bases and depots in their assigned zone of responsibility and investing them with appropriate rights and obligations both for making decisions on support to forces as well as for interworking with local industrial-economic entities, bases and establishments. It is advisable to leave tactical-level logistic entities—shore bases and rears of formations and units—directly subordinate to formation commanders. The proposed system will allow more efficient use of logistic forces and assets and their concentration on performing primary missions.

A logistic support system based on the territorial principle will consist of three precisely divided levels:

- fleet rear (fleet logistics directorate and its subordinate formations, units and establishments);
- operational rear based on the established logistic support areas with subordination to the deputy fleet commander for rear;
- tactical rear (shore bases and air maintenance facilities subordinate to appropriate formation commanders, and the rear of military units).

Such a structure will allow a substantial improvement in effectiveness of command and control through identification of operational rear entities and exclusion of intermediate levels of rear command and control (at the flotilla, squadron, and naval base level).

While having common principles of configuration and functioning, the logistic support system based on the territorial principle will differ for each fleet by unique features dictated by geographic location and specific nature of development of the local military-economic base. With consideration of these factors as well as of the military-economic situation in the country, the upcoming reduction in numerical strength of the Armed Forces, and gradual transition to a decentralized support procedure, it is advisable to conduct reform of the Navy Rear in two stages: in the first (1994) to introduce the establishment of 1-2 logistic support areas to the practice of all fleets; in the second (1995) to shift fully to a territorial logistic support system.

Logistic support areas will service fleet formations, units and establishments of varying subordination (in the logistic support area zone of responsibility) and will be of the 1st or 2nd category depending on the number of personnel. Joint efforts based on new achievements of science and technology will be required of the Navy Rear staff, fleet rears and scientific research structures to resolve basic problems of developing and improving the logistic support areas. This will allow achieving high effectiveness in using the logistic support system of fleets with substantiated rational expenditures of physical and financial resources and time.

What has been said above also goes fully for the second component of the overall system of support to naval forces—engineer support. It is accomplished along the following basic directions:

- supporting everyday fleet activity during operational and tactical training;
- constructing berths for ships and repairing and maintaining hydraulic engineering works;
- repairing access roads, highways and railroads and keeping them in operating condition;
- supplying power to surface ships, submarines and fleet shore facilities and repairing shore power generator units;
- supplying the fleet with engineer equipment and organizing its maintenance.

In addition, basic engineer support measures include outfitting dispersed basing facilities; additionally equipping primary basing facilities; preparing and keeping up maneuver, supply and evacuation routes; performing comprehensive maskirovka [lit. "camouflage", however, includes "concealment" and "deception"] of basing areas; restoring combat effectiveness of forces and mopping up in the aftermath of enemy strikes; covering likely landing sectors on seacoasts with obstacles, and also providing engineer support to the landing of amphibious assault forces.

The existing organization and numerical strength of engineer units of fleet naval engineer services does not fully correspond to performance of the full extent of those missions and to advance engineer preparation of theaters and areas, especially on the northwestern axis. Because of their small TO&E strength, naval engineer battalions and base engineer battalions essentially have no opportunity to ensure urgent, simultaneous performance of their assigned missions of mobilizing wartime engineer formations and units and providing engineer support to deployment and combat operations of fleet forces in a threat period.

Measures for reforming and upgrading engineer units are planned in order to have balance in the fleet makeup and in its engineer support in everyday and combat activity. Among them, the main measures up to the year 2000 are the following:

- forming reduced-strength naval engineer brigades in fleets based on existing engineer units. This will permit performing all kinds of engineer support missions comprehensively and more efficiently and sharply reducing time periods for their mobilization;
- increasing deliveries of primary engineer equipment to bring its level in the fleets to 90-100 percent by 2003;
- upgrading and further developing the fleet basing system;
- increasing the extent of dock frontage for ship anchorage at basing facilities to normative requirements;
- developing and accepting the supply of new, high-capacity, mobile naval engineer equipment for supplying ships with water, steam, high-pressure air and electrical power of necessary parameters;
- developing a set of equipment for breaching antilanding obstacles in shallow water at amphibious assault force landing sites;
- creating new means of maskirovka and simulation at basing facilities;
- developing a set of measures and solving the problem of recycling ship nuclear plants and spent nuclear fuel and reprocessing liquid and solid radioactive wastes;
- developing a set of measures for recycling missiles and conventional arms.

Resolution of the housing problem is a very important direction in supporting naval activity. With the intensive growth of naval forces the residual principle of financing

expenditures for the social sphere in past years exacerbated the housing problem and led to a deterioration in the personnel's social-everyday support. Over 20,000 homeless servicemen were on record as of 1 January 1993. Around 15,000 Navy officers and warrant officers are to be resettled from the Baltic and other states during 1993-1995.

Thus, implementation of military reform presents a number of important problems for the Navy Rear and Main Engineer Directorate. Their successful resolution will contribute to increased combat readiness of the Russian Navy.

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Situation Evaluation in Developing Support Concept
94UM0114B Moscow MORSKOY SBORNIK in Russian
No 9, Sep 93 (signed to press 7 Sep 93) pp 38-39

[Article by Captain 1st Rank V. Tolmachev, candidate of military sciences, professor: "The Situation Estimate in Developing a Logistic (Technical) Support Concept"]

[Text] Guidance documents specify the sequence for developing a concept on which decision-making for employing naval forces is based. After the missions of support to naval forces in an operation or combat operations are clearly understood, the most important element of this work is the situation estimate. A creative thought process, it is closely interrelated with changes occurring today in operational art, tactics, basing, and forms and methods of logistic and technical support to naval forces.

The methodology for a situation estimate in logistic entities has its features. It begins not with the estimate of enemy forces, but of friendly forces. The chief of rear services (or of technical support) and the chiefs of services perform it in two stages. The first stage is an evaluation of forces of the supported large strategic formation (formation, grouping), of their makeup and status (state of supply), and of the requirement for logistic, technical and other kinds of support to permanent readiness forces and buildup forces in preparation for and in the course of an operation or combat operations. The second stage is an estimate of supporting forces and assets: Presence, status and capabilities of the rear (and of other kinds of support); status of means of transportation and measures for their preparation and support of military transport movements; proposed delivery volumes of supplies and technical equipment and capabilities of all kinds of transport in preparing for and in the course of an operation or combat operations; extent of preparation and delivery of weapons and other supplies, and of repair and restoration of ships and equipment; capabilities for evacuation and medical assistance; personnel morale; conditions of command and control of rear services and of technical and other kinds of support, and the availability of forces and assets for this; organization of coordination and so on. The result of a situation analysis in these stages will be a concept for configuring the rear (technical and other kinds of support) corresponding to the

nature of the upcoming operation or combat operations and to the missions and operational (tactical) configuration of naval forces.

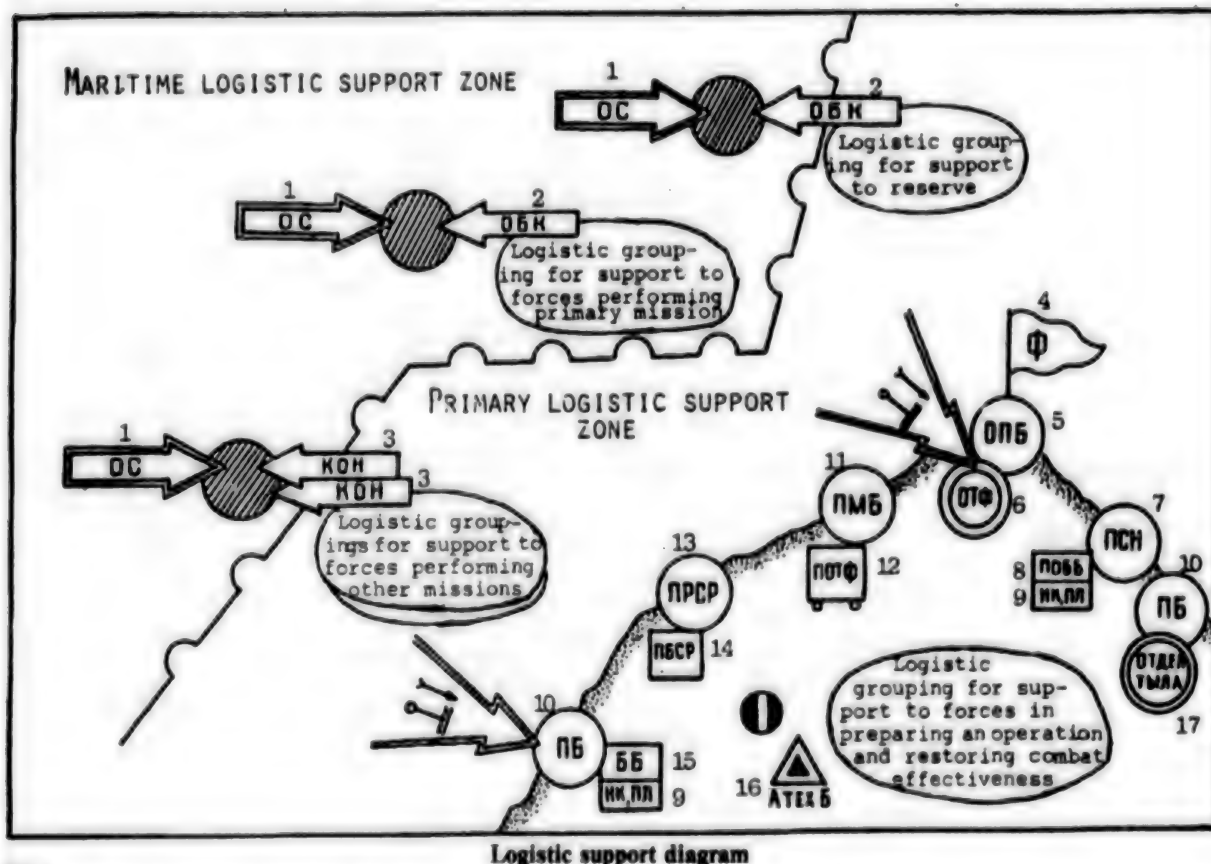
Then an estimate is made of the area of stationing, operations, and displacement of logistic and technical groupings, formations, units and establishments. The following are taken into account: The area's physical-geographic, hydrometeorological, climatic and socioeconomic conditions; degree of supply of engineer equipment in support of basing, and the organization of logistic and other kinds of support; status of the area's communication routes; nature of terrain most convenient for deployment and operations of support forces and assets; and possibilities of using the local military-economic base and resources.

Following an estimate of friendly personnel and assets and of the area, the command and control entities estimate the enemy. The important thing here is to determine the extent of probable effect of specific enemy forces on logistic and technical support installations; presumed destruction of nuclear power engineering enterprises and of chemical and other potentially dangerous industrial installations in logistic support zones; probable medical casualties and expected disabling of support forces and assets. As a result, conclusions are drawn about the need to take steps to improve survivability of the basing system and of logistic and technical support to fleet forces. Based on these conclusions, forces and assets for organizing protection, security, defense and operational maskirovka [lit. "camouflage", however, includes "concealment" and "deception"—FBIS] are calculated; the layout of areas and points for dispersed basing and support of forces is adjusted; and movement routes of forces and assets are determined for their safe functioning.

Based on these situation estimates, a decision is made on the most rational use of logistic (technical and other kinds of support) entities in the upcoming operation or combat operations, on their final preparation for performing missions, and on the work sequence of command and control entities of particular kinds of support; and proposals are developed for additional cover for logistic support to forces.

Under this version the situation estimate as applied to each kind of support permits developing a concept of logistic (technical) support to fleet forces which specifies directions for concentrating main efforts of support entities in preparing for and in the course of an operation or combat operations; the sequence of operations for supporting the forces; boundaries of logistic support zones; and the makeup and configuration of groupings for comprehensive support to forces.

Thus, the situation estimate must begin with an estimate of friendly forces, since support personnel and assets are intended for creating favorable conditions in the performance of assigned missions by combat forces. Having estimated friendly forces and the area, we estimate the

**Key:**

1. Task force; 2. Combatant ship detachment; 3. Convoy; 4. Fleet; 5. Main Fleet Basing Facility; 6. Fleet Rear Services Facility; 7. Supply point; 8. Shore-based (Mobile?) Support; 9. Surface ships, submarines; 10. Tender; 11. Naval Tender; 12. [Expansion uncertain, possibly Mobile Fleet Rear Service Detachment]; 13. [Not further expanded, possibly Mobile Repair Facility]; 14. Mobile Missile Tender(?); 15. Shore Base; 16. Aviation Maintenance Facility; 17. Rear Services Detachment.

enemy from the standpoint of the greatest threat which he presents to the unified basing and logistic and technical support system being established. Necessary changes are made and the most rational methods of comprehensive support to friendly forces are analyzed taking into account pressure from enemy forces and assets.

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Navigation Safety: Improving Ship Command and Control

94UM0115A Moscow MORSKOY SBORNIK in Russian No 9, Sep 93 (signed to press 7 Sep 93) pp 43-46

[Article by Captain 1st Rank (Retired) N. Gorshkov, candidate of naval sciences, under rubric "Discussion Rostrum": "Improving the Organization of Ship Command and Control Is the Basis of Navigation Safety"]

[Text] Over four years ago Captain 1st Rank (now Rear Admiral) D. Shtefanov wrote an article in MORSKOY SBORNIK entitled: "Navigation Is a Unified Process,"

but the discussion which was on the point of beginning was not broadly continued... I made a new attempt to continue it, but the editors informed me that "much of what you propose . . . already has been implemented; in particular, specific changes have been made to the Korabelnyy ustav VMF" [Navy Shipboard Regulations]. Central staff reviewers evidently played their role here. But even today I would like to dwell on certain questions of organization of ship command and control dealing directly with navigation safety, considering that these specific questions have not been covered either in general or in the journal's pages in particular. I am proceeding from existing provisions of the "Korabelnyy ustav VMF" and the actual outfitting of ship control stations with technical navigation and automation equipment and with electronics.

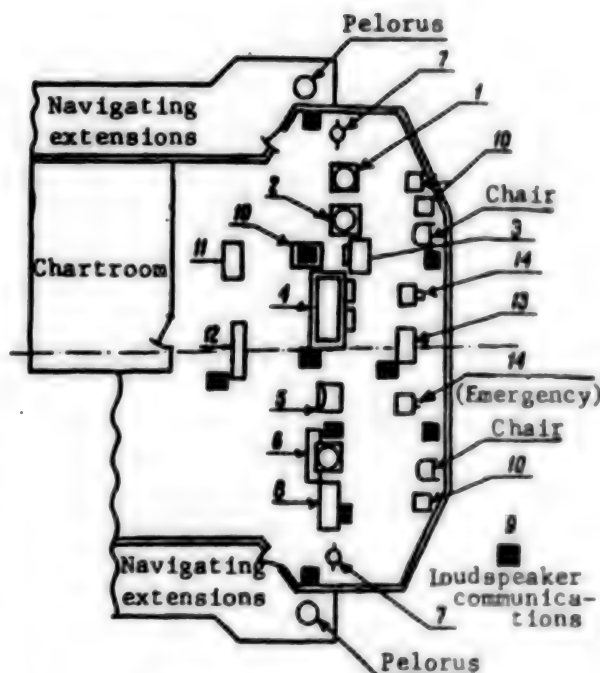
It is common knowledge that in accordance with requirements of the "Korabelnyy ustav VMF" (Article 143), the ship commander is obliged "to maintain his place in the order and to maneuver . . . in all instances acting with initiative and decisiveness; plot the ship's track with the

very same precision as when operating singly, and inform the force if, according to his calculations, the course of the force or of some ship is leading to danger." Article 148 of the "Korabelnyy ustav VMF" points out that "the ship commander is responsible for navigation safety and ship maneuvering," and the following article states: "For purpose of navigation safety the ship commander must . . . regularly determine the ship's position personally." In accordance with Article 150 the commander "is responsible for precise compliance with rules for preventing ship collisions at sea and for the ship's navigation safety," and under Article 155 he must, "when operating in narrows, under conditions of limited visibility, and near shores and navigational hazards . . . require the navigation department to plot the ship's track with maximum accuracy."

The watch officer also is responsible in matters of navigation. Thus, Article 812 of the "Korabelnyy ustav VMF" obligates him "to know the operating area and be able to use technical navigation equipment for position finding and plotting the track"; Article 820 prescribes that he "monitor plotting of the ship's track by periodically determining her position; direct the combat information center's work of ensuring navigation safety; monitor a change in bearing on meeting ships and determine conditions for passing." Article 823 states: "While the ship is underway the watch officer is obligated to be on the navigating bridge (in the control room) constantly."

Let us examine how compliance with these regulation duties in navigation is ensured on ships. A standard makeup of instrumentation for navigation purposes is envisaged in the ship's navigating control station (see diagram).

A close-in sea situation station, which includes an NTDS (automatic radar plotting system) console, navigational radar remote plan-position indicator, automatic plotting table and chart comparison unit, has been established in the navigating control station on essentially all modern ships. Therefore with such instrumentation the navigating control station team can fully assess the situation, calculate ship maneuvering with consideration of compliance with navigation safety requirements, and make a substantiated decision on controlling ship maneuvers. The ship commander (or person filling in for him—executive officer, combat control officer) and watch officer can perform their responsible navigation duties successfully under all situation conditions if they have appropriate training for work on instrumentation in the navigating control station. But it should be noted that there are no devices from navigational equipment in the navigating control station; they are accommodated only in the chartroom and control center. Therefore to perform their navigational duties in a full-fledged manner as specified by the "Korabelnyy ustav VMF," the commander and watch officer must leave the navigating control station for a certain time (10-15 minutes) and work in the chartroom. While the commander may do this, the watch officer is prohibited from doing so by the "Korabelnyy ustav" (Article 823).



Ship navigating control station diagram

Key:

1. Navigational radar remote plan-position indicator.
2. NTDS or SARP [automatic radar plotting system] control console.
3. Television surveillance system video monitor.
4. Automatic plotting table with navigator's information devices: Indicators of course, speed, latitude and longitude of position and so on.
5. Sonar remote indicator.
6. Chart comparison unit.
7. Optical sights.
8. Watch officer desk.
9. Telephone and loudspeaker communication switchboards.
10. Remote communication consoles.
11. Automatic radar plotting system printer.
12. Vertical situation plot.
13. Automatic steering operator console.
14. Electrical engine telegraphs: Primary and emergency or main propulsion plant remote control console.
15. Information devices for propeller rpm (tachometers) and rudder blade position, device indicating status of running and anchor lights, and certain others.

Thus, to remedy this discrepancy it is evidently advisable to equip the navigating control station with certain instrumentation of limited makeup duplicating the chartroom equipment. In particular, it is possible to install a Pirs-1 or KPF-2 shipboard radionavigation system phase-measuring receiver-indicator and also a KPI-4 pulse radionavigation system receiver-indicator. It would be useful for the ship commander and watch officer in the navigating control station to have a satellite navigation system receiver-indicator, which in combination with the radar/automatic

radar plotting system and electronic chart would permit controlling the ship by eye with a high degree of reliability. When the ship operates in the range zone of navigational radars, the latter can be used by the watch officer to determine his position. The chart comparison unit, or navigational radar general-purpose indicator as it is called on ships constructed in recent years, should be used in narrows or when operating near shore.

It should be stipulated here that while the makeup of instrumentation in the control center is similar to that indicated with slight exception depending on its layout, in secondary control stations even of modern ships only limited instrumentation is accommodated for solving navigation problems and for maneuver calculations. Not one of our Navy ships has any navigation equipment in the secondary control station, which hardly can be deemed substantiated under today's conditions. But this is a subject for a separate article devoted directly to understanding the activity, organization and outfitting of the ship secondary control station.

But we will dwell in more detail on equipment in the chartroom, where necessary navigation equipment is accommodated which supports solving navigational problems in a full-fledged manner. However—and this must be emphasized—there is not one device there from navigational radars, from the automatic radar plotting system or from the NTDS. Therefore in order to familiarize himself with the surface situation, the watch navigator periodically has to move from the chartroom to the navigating control or secondary control station. It must be assumed that this is not the best solution to the problem under difficult navigating conditions.

I recall that the following questions were being discussed several years ago in connection with the above shortcomings: 1) transferring radionavigation system receiver-indicators from the chartroom to the navigating control station, i.e., creating a combined bridge and chartroom, which already has been implemented aboard many Maritime Fleet vessels; 2) outfitting the chartroom with navigational radar or NTDS indicators. But at that time people did not agree with these proposals. A compromise version also was not completely resolved for outfitting a full-fledged navigator station in the navigating control station for the navigator's work when operating in the coastal zone, in narrows and under difficult navigational and marine conditions, when joint work of commander and navigator is especially needed to ensure navigation safety both against grounding and against colliding with other ships or vessels. Therefore the question of outfitting the navigating control station with navigator equipment and outfitting the chartroom with close-in sea situation coverage equipment remains pressing and must be discussed anew; a scientific study of this issue must be made and substantiated expert assessments by specialists—ship commanders, navigators, flag specialists, i.e., those who constantly encounter this problem—must be obtained.

People may say that today there are combat information centers on all 1st and 2nd rank ships and combat information stations on 3rd rank ships, one task of which is to provide technical support to ship navigation safety. In fact, sufficient instrumentation is accommodated in both for covering situations of all kinds. But the combat information center or station has no technical equipment at all for ensuring navigation safety except navigational radar and sonar indicators. The modern combat information center is attended by five or six operators working under condition 2 under the direction of the combat information center watch officer. The combat information center watch officer duty is performed by heads of electronics subunits who for the most part have an insufficient idea about questions of navigation and ship maneuvering and consequently are incapable of resolving them responsibly. Operators at consoles and electronic plotters are seamen and petty officers who do not have appropriate training or legal rights for resolving issues of navigation and control of ship maneuvers.

As was shown above, with the help of NTDS or automatic radar plotting system operators (and sometimes also without them) the commander at the navigating control station or secondary control station can develop and make an independent decision without prompting from the combat information center (combat information station) passed (sometimes distorted) over telephones or loudspeaker communications. Moreover, nowhere in Navy guidance documents does it say that the combat information center (combat information station) is assigned tasks of calculating the maneuver for passing ships at sea and other maneuvers and ensuring monitoring of navigation safety. Existing wordings such as "the electronics department is intended for organizing and controlling surveillance and providing the commander, the control station, and battle station with situation information, calculations and data for combat and tactical maneuvering" are, as we see, rather vague and not very specific. What calculations and what data? It is not clear. True, if one uses reference literature such as the latest edition of the "Voyenno-morskoy slovar" [Naval Dictionary], the article "Combat Information Station" states that it "is intended for . . . performing calculations and coming up with suggestions for decisionmaking for combat maneuvering, employment of weapons, use of personnel and other purposes." But this is either a mistake or ignorance of the matter. Who in the combat information center (combat information station) can come up with suggestions on these matters, and based on what data? This is the prerogative of the control center team headed by the ship commander. The control center has appropriate technical equipment for this purpose. It is surprising that authors of the terms "combat information center" and "combat information station" do not know that they are incapable of coming up with the "suggestions" for decisionmaking by the commander prescribed for them. The combat information center (combat information station) also is incapable of "monitoring navigation" by duplicating navigation department functions, since there is no officer in the

combat information center makeup who is competent in questions of navigation, nor is there the necessary technical equipment. This also contradicts the classic assertion of the textbook "Prakticheskoye korablevozhdeniye" [Practical Navigation], which states that "tasks of guaranteed assurance of navigation safety of ship operation . . . can and must be performed only by a person, a seafarer, who is appropriately trained, invested with specific rights and duties, and bears personal responsibility for navigation safety."²

Ship navigation in the ocean today has become greatly complicated. In our view, this requires adjusting the existing organization of ship command and control when operating under condition 2 in order to ensure her safety and to precisely determine functions of crew members participating in this. This is especially important when passing a large number of targets at sea, when operating in narrows and near shore, and under other difficult navigational conditions, when teams of the navigating control station, chartroom and combat information center (combat information station) should be beefed up. For this it is necessary to have a special bill placed into effect at a special signal. Such bills have existed and exist even now in a number of forces, but all were developed without uniform requirements and have no precise scientific basis.

In this connection it appears advisable also to have a "Rukovodstvo (rekomentatsii) po ispolzovaniyu komandnykh punktov korablya proyekt . . . v usloviyakh yego boyevogo primeneniya i pri yego povsednevnom plavanii" [Manual (Recommendations) on Use of Control Stations of the Design Project . . . Ship Under Conditions of Her Combat Employment and With Her Everyday Operation] developed in advance aboard each ship when she is turned over to the Navy. Such a document should be developed for each type and even each class of ship, since with one and the same "command and control doctrine" but varied outfitting of control stations with particular technical equipment and their dissimilar level of automation, recommendations on their control also will vary.

There have been instances in shipbuilding practice when such "Manuals" have been developed for certain types of ships by instruction of the Navy command, but this positive undertaking did not see further development due to organizational defects. In particular, over many years in the Navy an organization just was not specified which would bear full responsibility for developing the "Manual," checking it in state official testing of ships and adjusting it in the process of ship operation.

This occurred and is occurring at present because no one in the Navy handles to the full extent questions of organizing ship command and control, conducting studies and generalizing experience in this area. Naval institutes resolve only special questions of control (in navigation, in use of specific kinds of weapons and equipment), often following a policy of autonomous monopolism. The confirmation of this is the situation in which not one meeting, scientific conference or other

activity devoted to comprehensive problems of combat and everyday ship command and control has been held in a single scientific organization, central Navy staff or higher naval educational institution in the last 20-25 years. These problem issues also are covered poorly in our Navy periodical press.

In conclusion I would like to call on ship officers (ship commanders, force commanders and chiefs of staff, interested flag specialists, department heads and others) as well as officials of scientific research institutes, higher naval educational institutions and the central staff to express their opinions on these questions, share experience, tell how they are being resolved on ships and what is advisable to do so the situation in the area of ship command and control is improved significantly.

Footnotes

1. MORSKOY SBORNIK, No 2, 1989, p 25.
2. "Prakticheskoye korablevozhdeniye" [Practical Navigation], Leningrad, GUNIO MO [Ministry of Defense Main Navigation and Oceanographic Directorate], 1989, p 15.

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R-Adm Zubkov on Problem of Ship Command and Control

94UM0115B Moscow MORSKOY SBORNIK in Russian No 9, Sep 93 (signed to press 7 Sep 93) pp 47-49

[Article by Rear Admiral (Retired) R. Zubkov: "Problems of Ship Command and Control. In Search of the Truth"]

[Text] It must be admitted that an attempt to substantiate my opinion concerning questions touched on in the article by Captain 1st Rank (Retired) N. Gorshkov generated certain difficulties for me connected chiefly with the fact that I have not been engaged in practical activity of ensuring navigation safety of ships for eight years now. Therefore I frankly envied the boldness with which Gorshkov again took up the pen to express practical considerations on this problem. And in my opinion, he is right in criticizing the editors of MORSKOY SBORNIK for "incomplete work," i.e., for the fact that discussion subsided on the article by D. Shtefanov "Navigation Is a Unified Process" and its results were not summed up.

It seems to me that Gorshkov's critical comment that "no one in the Navy handles to the full and necessary extent questions of organizing ship command and control, conducting studies and generalizing experience in this area." I would emphasize one other thought. In my view, there is neither a scientific nor a management organization in the Navy which would work for the ship commander and for providing him with best conditions for combat and everyday ship command and control. In addition, Gorshkov's suggestion about developing manuals on organization of command and control of ships of various design

projects under combat and everyday conditions in performing tasks using technical equipment of command control systems appears advisable. And I would very much like to have those officials on whom the development, discussion and realization of contemporary "doctrine of command and control" (Gorshkov's term) of ships depend pay attention to these statements by Gorshkov and make the necessary decisions.

Unfortunately, the other theses set forth in Gorshkov's article need serious, critical analysis. Thus, for example, it is impossible to agree with his taking offense at Navy central staff reviewers because of a refusal to publish some of his articles in *MORSKOY SBORNIK*. In fact it must be admitted that much has been done and is being done in the Navy in the matter of perfecting ship command and control, and it is indisputable that this is reflected in the "Korabelnyy ustav VMF" [Navy Shipboard Regulations] and other guidance documents. In particular, opening up the 1986 edition of the Regulations, one can find requirements of Article 155 on ensuring navigation safety of the ship under difficult conditions: "g) strengthening of visual, listening and technical lookout for detecting navigational hazards and covering the sea situation; conduct of a radar plot of detected targets by the combat information station (watch officer), determination of conditions for passing and the danger of a collision, and calculation of the maneuver for preventing a dangerous closing with them; h) monitoring of the ship's precise movement along a given route by the combat information station (radar lookout posts); use of data of the coast surveillance and traffic control systems for navigational orientation..."

Further, guidance documents specifying the activity of electronics departments explain in detail the way in which combat information centers (combat information stations) perform these tasks. Quoting them would be rather lengthy, but take my word for it, these documents proceed from the new requirements of the "Korabelnyy ustav," which requires that the watch officer not simply "monitor plotting of the track," but specifically (Article 820) "b. monitor the precision and safety of the ship in following a designated course by periodically determining her position."

It is absolutely for nothing that Gorshkov offends both the compilers of the "Voyenno-morskoy slovar" [Naval Dictionary] and in particular the author of the article "Combat Information Center (Combat Information Station)."¹ The fact is, he would find in electronics service guidance documents if not a verbatim coincidence, then at any rate a full semantic coincidence with the wording of combat information center (combat information station) functions. Here it is: "The combat information center (combat information station) is intended for graphic display and analysis of the current situation, performing calculations on combat employment of electronic equipment, weapons and shipboard aviation, controlling electronic equipment, developing suggestions for combat and tactical maneuvering, and

also monitoring safety of ship navigation and maneuvering." Therefore editors of *MORSKOY SBORNIK* pointed out to him with substantiation that many of the questions he raises already have been resolved. True, perhaps the decisions made did not always meet Gorshkov's personal approval. This also goes for his suggestion about introducing a ship bill for operating under difficult conditions, which has existed for many years now. But it must be taken into account that now a revision of previous guidance documents and development of new ones is underway again. Some already have been published, some soon will see the light, and some are only being prepared for publication. The conscientiousness of the researcher requires taking these circumstances into account and also finding an opportunity to become familiar with new documents at various stages of their introduction.

In attempting to confirm the inadvisability of the combat information center (combat information station) exercising redundant monitoring of navigation safety of ship operation, Gorshkov refers to the book "Prakticheskoye korablevozhdeniye" [Practical Navigation]² (calling it a textbook, although it is an official aid: that was the meaning the CinC Navy put into it in permitting this book to be published). And he snatched only a quotation of a general philosophical nature which he needed (p 15 of the Foreword), but was silent about provisions in which specific functions of the electronics department and combat information center (combat information station) on ensuring navigation safety are spelled out in detail (pp 803, 807).

Gorshkov's assertions about incompetence of graduates of the Higher Naval Radio-Electronics School imeni Popov and Pacific Higher Naval School imeni Makarov in matters of navigation (and development of suggestions for the ship commander's decisions on maneuver and employment of weapons!) sound rather categorical. These assertions possibly would have been fair in the 1950's and 1960's, when the author was serving aboard cruisers. At that time, I recall, officers of the navigator specialty were assigned to the electronics service as surface situation group officers (evidently out of those considerations about which Gorshkov writes). But in the 1980's, as chief navigator of the Navy (aboard ships) and as a representative of state commissions (in the Pacific Higher Naval School imeni Makarov), I had occasion to be convinced of the sufficient preparedness in matters of navigation (and naval tactics too!) of officers standing or preparing to stand watch in the combat information center (combat information station). To put it mildly, his assessment of present warrant officers, petty officers and seamen standing watch at the console or plotter in the combat information center (combat information station), let alone those continuing contract service, also is far from objectivity.

And legal rights of console and plotter operators to develop suggestions on maneuvering and to assess the sea situation are spelled out by ship bills (who is to sit at the console!), by instructions to watch specialists (which

tasks to perform, on whose order, and to whom and about what to report?), and by their authorization for independent watchstanding.

One cannot ignore Gorshkov's assertion of the absence in the ship navigating control station of technical navigation equipment needed by the watch officer for performing his functions of monitoring precision and safety of navigation. On the navigating bridges of modern ships and on the bridges adjoining them there are gyro repeaters, including with optical compass locators; optical sights for observation and direction-finding; automatic plotting tables; indicators of speed, distance covered, and latitude and longitude of location; radar and sonar remote plan-position indicators; chart-computer attachments to radars (or general-purpose indicators); and, finally, fathometer indicators. What more does the watch officer need? In my opinion, everything is there that is required, and he can monitor the ship's position when close to shore without leaving the navigating control station.

Thus, Gorshkov probably is speaking not in general about technical navigation equipment, but only about radionavigation system receiver-indicators; he proposes to additionally equip the navigating control station with a set of them in addition to those installed in the chartroom. But first of all, on the majority of modern ships the chartroom essentially is an element of the navigating control station, separated from it only by a light bulkhead. Secondly, the watch officer can perform his navigational monitoring function even not during watch, but before going on watch. Thirdly, the rigid requirement of Article 823 of the "Korabelnyy ustav" for the watch officer "to be on the navigating bridge (in the control room) constantly" was preserved, it would appear, from those remarkable times when the watch officer could stand watch independently in the commander's absence on the bridge (or navigating bridge). But today the commander or his executive officer, being in the navigating control station, not only has the right, but is obligated, guided by Article 820b of the "Korabelnyy ustav," to release the watch officer to the chartroom to determine position. Fourthly, in proposing to additionally equip the ship navigating control station with receiver-indicators, he should at least have recommended their contemporary models and not those obsolete long ago. And fifthly and finally, today, to the contrary, it is time to pose the question of relieving the watch officer of routine navigating functions. This was a forced measure dictated by our certain technical backwardness. It is necessary to actively adopt comprehensive automation of the navigation process, particularly position finding. For this, for example, the ship's GLONASS satellite radionavigation system gear should be in a set with an automatic plotting table, whose light spot in this case will continuously display not the DR position, but the precise fix of ship location, and the watch officer will not have to determine it manually and perform calculations and plots. This mode, the so-called observation reckoning mode, already was realized long ago in a number of navigational systems using ground radionavigation systems, although the precision and reliability of the latter's operation for now

reduce its effectiveness and safety. By the way, this mode has nothing to do with "visual" navigation about which Gorshkov writes.

Further, the author repeatedly refers to civilian shipbuilding experience, in which great progress has been achieved in the area of ergonomic approaches to outfitting navigating bridges of vessels to improve effectiveness in controlling them. It is strange that he did not find place in his article for making a suggestion to create a watch officer console for ship navigating control stations. It is no secret that today, even with average situation intensity, a watch officer has to rush about the bridge: the radar remote plan-position indicator is at one end and the optical compass locator at another; the remote VHF/UHF communications console is on one side and the ship intercom telephone on the other, and so on. It appears that it would not be a great hindrance to the watch officer to have a console situated in the forward part of the navigating control station directly beneath the portholes which would consolidate the automatic plotting table; navigational information devices (indicators of course, speed, distance covered, latitude and longitude of position, sea depth); automatic radar plotting system; rudder controls and devices for transmitting speed commands to the power plant and damage control station or to the engines (and/or to their remote controls); mnemonic diagrams describing the status of basic elements of the power plant, weapons and surveillance equipment (operating or not, on duty or not, assigned sectors and so on); external radio communications and internal ship loud-speaker and telephone communications terminal devices; a display showing the position of ships sailing in company from the standpoint of the danger of them being hit by one's own weapons or the presence of one's ship in sectors where there is danger of being hit by weapons of adjacent ships, and so on. It seems to me that a proposal of that nature—and Gorshkov was close to it—would be considerably more useful than one about installing additional receiver-indicators.

Gorshkov's idea, consisting of the determined separation of the combat information center (combat information station) from the control center, generates a special objection. This question seemingly has nothing directly to do with navigation safety, but it is a very important part of the "doctrine of command and control" of the ship about which the author speaks. Therefore it cannot be bypassed. It seems to me that today it is necessary to speak about the fact that the control center is the ship's battle management center. Its basis is the combat information center (combat information station), which produces suggestions for the ship's tactical employment, accomplishes the use of command and control equipment (observation, reconnaissance, target designation, target distribution, communications jamming, and so on) and performs certain other tasks, and the component parts of the battle management center are the control station and/or battle station, which perform navigation, weapon employment and communications. That which the author considers the control station team (sometimes also called the ship's combat team) will consist of technical equipment operators of the

combat information center (combat information station) and of the aforementioned control station and/or battle station, and also the heads of such entities. Developing this thought, it can be pointed out that it would be advisable to bring this group of specialists together into one ship department, which could be called either the operations department (perhaps better the tactical department) or the control department, ship employment department, or combat systems department. Such names are used in foreign navies (although their "filling" may vary in different navies and even on ships of different classes of the same navy). Casting smugness aside, it is necessary to study, analyze and use the experience of foreign navies, especially as they have more experience both in World War II and after it (Vietnam, the Falklands, Persian Gulf) in the area of combat employment of ships (and consequently their command and control). In this connection our "dashing" from the electronics service to the control department and then to the electronics department is not very understandable. The presently existing missile-gunners, mine-torpedo and electronics departments (less the aforementioned subunits, control stations and battle stations) could become a unified department for service (in contrast to employment) of weapons, technical equipment of command and control and navigation (electronics), and munitions. I will not develop this thought further, since this is the subject of a separate conversation. I hope for its development by other readers.

Those are some considerations with respect to suggestions expressed by Captain 1st Rank (Retired) Gorshkov. They probably are not indisputable and possibly are not suitable in all respects for today's shipbuilding practice, organization of shipboard duties, and Navy combat training activity. Like Gorshkov's suggestions, they are based on past, albeit "fresher," experience, but they take into account requirements of modern documents. I hope naval officers will support the discussion topic in pages of *MORSKOY SBORNIK* on perfecting command and control of ships and on organizational and technical matters both in the interests of navigation safety as well as for improving effectiveness in performing missions assigned to ships of various types, subtypes and design projects, including submarines.

Footnotes

1. "Voyenno-morskoy slovar" [Naval Dictionary], Moscow, Voenizdat, 1990, p 52.
2. "Prakticheskoye korablevozhdeniye" [Practical Navigation], Leningrad, GUNiO MO [Ministry of Defense Main Navigation and Oceanographic Directorate], 1988-1989.

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Notes on Joint Exercise With Kuwait

94UM0142A Moscow IZVESTIYA in Russian
25 Dec 93 p 3

[Article by IZVESTIYA correspondent Viktor Litovkin: "Peaceful Engagement Starts Christmas Eve at Kuwait Shore"; first paragraph is IZVESTIYA introduction]

[Text] Russia and Kuwait will conduct joint naval exercises, for the first time in the history of relations between the two countries, in the Persian Gulf, starting at 00 hours 00 minutes on 25 December. They will last until 29 December.

Representing the Russian side will be the large antisubmarine ship "Admiral Vinogradov" (displacement: 8,600 tonnes; length: 162 meters; built in 1988 at the Yantar Shipyard in Kaliningrad; complement: 300 men; armament: missile, air-defense, torpedo, and gun systems; fitted with various kinds of electronic equipment and electronic warfare gear; there are also helicopters). Also the large amphibious warfare ship "Nikolay Vilkov" (also constructed in Kaliningrad; displacement: 13,000 tonnes; length: 158 meters; beam: 25 meters; carries a battalion of naval infantry reinforced by armor, but no landing will be made at the exercises). Also to be present will be the oiler "Kalichitskiy" (displacement: 22,000 tonnes; carrying 16,000 tonnes of fuel, lubricants, and fresh water, and also food supplies.)

The Pacific ship detachment will be under the command of Captain 1st Rank Aleksandr Yakovlev. He is a graduate of the Baku VVMU [Higher Naval School] and the Naval Academy; his post is that of Deputy Force Commander.

Representing the Kuwaiti side will be a missile fast attack craft and patrol boats (all built in the FRG), an auxiliary ship, and fixed- and rotary-wing aircraft of the local Air Forces.

Admiral Valentin Selivanov, chief of the Naval Main Staff, stated in an exclusive interview he granted IZVESTIYA that during the exercises it is planned to conduct mock combat operations using maps; develop communications and interoperability between ships of the two countries. (Both visual and radio communications will be employed. Special signals have been devised for this purpose. - V.L.); organize observation of the aerial and underwater environments; and carry out enemy detection and notification procedures.

In addition, the Russian and Kuwaiti sailors will work out tasks related to defending the shores and ships at anchor, during passage at sea, and during cruising in company. They will counter aerial attacks by employing shipboard equipment; search for submarines; develop a technique for rendering assistance to a ship in distress; and carry out joint naval gunfires at aerial and surface targets. Kuwait's helicopters will be landing on Russian ships, and the Russian helicopters will do likewise on the Kuwaiti ships.

Admiral Selivanov said that he sees nothing unusual in the Russo-Kuwaiti naval exercises. Provision was made for the latter in an intergovernmental agreement on cooperation that was signed a month ago. In this effort, Kuwaiti sailors will be able to take advantage of the considerable experience gained by the Russians in the organization of naval training, while the Pacific Ocean Fleet men will enjoy yet another opportunity to improve their combat skills.

According to information received by the editors, Navy Commander-in-Chief Admiral Feliks Gromov is to fly to Kuwait to discuss the results of the exercise on 28 December. He will return home by the new year. Meanwhile, our sailors - 500 of them - will remain there, to spend the holiday in the Kuwaiti port of Shuwaikh. Sheik Sabah-al-Sabak is expected to visit the large antisubmarine vessel "Admiral Vinogradov."

It is interesting that the last time a ship flying the Andreyevskiy Flag visited Kuwait was in the year 1902. That was the legendary Russian cruiser "Varyag" under

the command of Captain 1st Rank Vsevolod Rudnev, a hero of the Russo-Japanese War. The ship was visited by the Uncle of the present Sheik.

Presently located in the Persian Gulf is the American aircraft carrier "Independence." (Displacement: 60,000 tonnes; length: 326 meters; beam: 40 meters; complement: 2,800 men; fixed- and rotary-wing aircraft: 84 F-14s, F/A-18s, and A-6Es.) She is being escorted by eight craft, including the cruiser "Mobile Bay," destroyers "Young," "Fine," and "Nicholson." They are capable of carrying Tomahawk missiles.

Also plying the gulf is the English destroyer "Campbelltown" (displacement: 5,000 tonnes; armament includes eight Harpoon missiles and a 114-caliber gun.)

The Christmas holiday will be somewhat marred for the sailors aboard those ships, of course. Whether they want to or not, they will have to follow the maneuvers being executed by the Russian and Kuwaiti ships.

INTERREGIONAL MILITARY ISSUES

Dissension Among Command Elements in Tajikistan*94UM0143A Moscow KOMSOMOLSKAYA PRAVDA in Russian 21 Dec 93 p 2*

[Unattributed article: "Stars Descend on Dushanbe"]

[Text] The Collective Peace-Keeping Forces (KMS), created on the initiative of the CIS states to maintain the peace in Tajikistan, now amount to a colossus possessing an excessively large "head" and very thin, useless legs. The "head" is the Unified Command of the KMS stationed in Dushanbe. It consists of about 200 officers under the command of Colonel General Boris Pyankov of the CIS OVS [Unified Armed Forces]. The KMS Unified Command should logically command the peace-keeping forces, but the reality is that it cannot do that.

Operationally subordinated to the KMS are the 201st Russian Motorized-Rifle Division, and Uzbek, Kazakh, and Kirghiz battalions; that is, operationally only. Directly in command of the 201st MSD [Motorized Rifle Division] is the Ground Troops commander, while the subunits from the former "fraternal" republics are under the command of the ministries of defense of the respective republics. The KMS possesses neither its own soldiers nor logistical support—fuel, weapons, ammunition. On the other hand, there does exist an intense wish to command.

However, all is not well in the above area, either. Kazakhstan still has not sent its battalion. Neither has Kyrgyzstan. An attempt was made to assert command over the Uzbeks, whose battalion is stationed at Shaartuz, by carrying out a joint exercise. The Uzbek officers immediately made a stiff demand: Give us fuel and ammunition. The KMS Unified Command turned to the 201st MSD and received the cold shoulder: Just why should Russia's Army support the Army of sovereign Uzbekistan?

It seems, only the 201st Division, the men of which are quite perplexed as to why Russian officers should carry out the orders of people who are not members of the Russian Army, is "fit for operation." The prevailing attitude there, in the CIS Unified Armed Forces, is the same attitude held toward the CIS proper: There may be a God, but who has seen him? This has provided grounds for a rather serious service conflict between Colonel-General Boris Pyankov and 201st Commander Colonel Viktor Timofeyev. It does happen that the General and Colonel are in contact with each other, but only via Moscow, with persons of the highest military ranks serving as intermediaries.

The leadership of the 201st MSD feels that the KMS Unified Command should consist of 30-40 persons for carrying out coordination work. The KMS Unified Command has recently taken on the function of "inspectors." Russian officers assigned to the KMS on temporary duty are fulfilling their obligation in an honorable manner. In

this connection, however, they also are aware that that particular agency is a superfluous intermediate structure.

Incidentally, not everyone is willing to discuss the above subject. The "KMS people" are living in a good hotel in Dushanbe and receive two salaries, with each day they spend in the capital counting as three days. Thus, pension credits are accumulating rapidly. Indeed, there at Kulyab "an encampment does stand."

Col-Gen Nikolayev on Tajik Border Situation*94UM0137A Moscow KRASNAYA ZVEZDA in Russian 28 Dec 93 p 1*

[Statement by Colonel-General Andrey Nikolayev, commander of the Russian Federation's Border Troops]

[Text] The situation on the Tajik-Afghan border continues to intensify. Armed formations of Tajik militants with the support of certain Afghan field commanders are continuing their attempts to illegally penetrate into the Republic of Tajikistan for the purpose of establishing a bridgehead on Tajik territory.

Militants armed with heavy weapons, missile launchers and air defense assets are being concentrated on the Pandj and Pamir sectors.

These and other facts indicate that the armed opposition is taking advantage of economic difficulties in the republic and making active preparations for combat operations.

The Russian Federation's border troops stationed in Afghanistan do not interfere in the Republic's internal affairs. At the same time, we remind certain "hot heads" once again that the Russian border troops, adhering to decisions adopted by the heads of the CIS states in Moscow on 7 August and 23 December of this year, will do everything necessary to prevent an armed invasion of Tajikistan's territory. Extremist actions on the border will be resolutely checked. Responsibility for possible consequences will lie with those forces which are attempting to thwart the processes of stabilization of the situation on the Tajik-Afghan border.

Incidentally, the press bureau of the Russian Federation's Border Troops reports that this past weekend the militants made three attempts to break into Tajikistan from Afghanistan on the sectors of the Moscow and Pandj border detachments. Following the shelling, the militants were driven back to adjacent territory.

The 12th Post of the Pandj Border Detachment was fired upon with automatic weapons on 26 December. The enemy's weapon emplacement was suppressed. At the same time an attack was made on a post of Tajikistan's GKNB [State National Security Committee] in the rear of the sector covered by the 10th Post of that detachment. One Tajik serviceman was killed. There were no casualties among the Russian border troops.

CAUCASIAN STATES

Karabakh Claims Capture of Afghan Mercenaries

94UM0155A Moscow KRASNAYA ZVEZDA in Russian
6 Jan 94 p 1

[Article by KRASNAYA ZVEZDA correspondent Petr Karapetyan: "New Year, Old Wars"; first paragraph is KRASNAYA ZVEZDA introduction]

[Text] Those who believed that the new year, 1994, will bring peace in the "hot spots" of the post-Soviet territories, albeit a peace fraught with difficulties and frustrating trials, have been deceived.

Battles raged in Nagorno-Karabakh on New Year's Eve. Azerbaijan's Army, which amassed its forces in the four months of the ceasefire, carried out a number of operations, including air strikes, along the entire front. Certain sources state that bombs were dropped on Noyemberyan and Idzhevan, and the latter are located in Armenia, not Karabakh.

The new year, 1994, shows signs that Nagorno-Karabakh will suffer savage battles, of a kind that have not been seen for some time. Experts ascribe that to the greater strength of Azerbaijan's Army obtained by the repositioning of cadres and the use of military advisers and mercenaries from neighboring countries. The State Defense Committee of the NKR [Nagorno-Karabakh Republic] states that it has in its possession more than 40 documents attesting that about 1,500 Afghan mojahedin personnel are participating in the war on the enemy's side. Some of them have already been taken prisoner.

Thus, termination of the ceasefire in Nagorno-Karabakh is an accomplished fact. And does it make any difference who violated the ceasefire, which had been attained with such difficulty? This kind of thing has happened before, and quite a number of times, at that. The belligerents, after becoming wound up in fierce and bloody warfare, would declare a ceasefire, but, instead of taking advantage of it to search for compromises and mutually acceptable solutions, would instead proceed to gather strength and even pile on more hatred!

The above scenario (and how I wish to God I could be wrong!) is similar to that occurring in the Georgian-Abkhaz conflict. In that terrible war, one threatening to spill the last drop of blood, the warring sides on a number of occasions have brought to bear their Caucasian wisdom: "Enough of that! Let us try to understand what has happened to us, who have lived side-by-side completely without incident for centuries." And they would take their places at the conference table, talk for a great length of time, and the people would rest from the war. At the appearance of a glimmer of hope that it was all over, that the war had ended, the current ceasefire would be perfidiously violated. Someone would be flexing his muscles while peace talks were in progress and again would step out of the "Caucasian chalk circle."

Is not the above scenario worked out to perfection in the Ossetian-Ingush conflict? And what about Chechnya? Is that not the place where people love to speak of peace, all the while keeping their finger on the trigger of an automatic rifle?

And so on and so forth. So the new year in the Caucasus started with a war. And blood is again being spilled and people are dying. To this one cannot become accustomed; to this, one cannot become resigned.

But hope, no matter how deeply it may be buried, does still remain.

MOLDOVA

Defense Minister's Report on Forces Restructuring Outlined

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in Russian 13 Nov 93 p 3

[Aleksandr Khavronin report: "Concepts and Prospects"]

[Text] The main attention at the first conference of ranking personnel of the Ministry of Defense on 1 November was paid to the concept of army organizational development. An extensive report was delivered by Defense Minister Pavel Creanga.

In his opinion, the chief merit of the concept devised in the fall of last year is that it systematized all measures for the accelerated creation of the armed forces. This document deals only with military matters proper. The remaining factors—preparation of the economy, creation of state reserves, strengthening of morale—will be the subject of other prescriptive enactments. Pavel Creanga believes that practice, operational-technical measures, and the experience of work among the troops confirm the topicality of the concept. The Minister criticized the proposals which Nicolae Petrica, former Chief of the Main Staff of the Armed Forces of the Republic, sent to President Mircea Snegur. Why? Petrica believes that a decisive role under today's conditions should be assigned not so much the regular forces as large-scale trained reserves (140,000), that is, a kind of "working army." It was proposed to this end that the republic leadership create under the auspices of the Ministry of Defense a network of centers for the military training of youth. And that the permanent staff of the armed forces consist of 6,500 men.

The Defense Minister explains why this is unacceptable: A threat to the republic's military security may be seen not in acts of aggression and wars of the nuclear powers and military blocs but in possible local conflicts, in which the Republic of Moldova would be forced to defend its independence and territorial integrity. Whence the conclusion that the armed forces should be such as to be able to quickly localize the center of tension, ensure defense of the borders, and cut short

possible provocations and encroachments on independence. Consequently, the Minister concludes, the troops should be professional and ready to fight, and the manning level of the reserve should not perform the predominant role.

Setting forth the concept of army organizational development, the Defense Minister highlighted the main tasks of the regular troops: To efficiently and rapidly confront any possible threat without additional mobilization measures. If necessary, to be capable of additional manning to the level of wartime; to ensure a high level of the training of the command and control bodies and the personnel; and also of a militarily trained reserve capable of performing operational assignments. The Ministry of Defense is oriented toward the European average ratio of the strength of the personnel and the population—0.6-0.8 percent (0.23 percent with us). The concept defines the main function of the armed forces as performance of the assignments of deterrence against military provocations and aggression. The draft concept, the speaker observed, should be modified in connection with the creation of the Civil Defense and Emergencies Department.

Defense Minister Pavel Creanga termed "absurd and harmful" General N. Petrica's proposals concerning the incorporation in Ministry of Defense formations of the Carabinieri forces, whose assignments are totally different. Legislation prohibits the enlistment of carabinieri forces for assignments that are not within their province.

Pavel Creanga believes to be completely wrong Nicolae Petrica's opinion concerning alternative service because it has not been justified "from either the economic or moral viewpoints." The Ministry of Defense has devised proposals for the government which will help avoid wrongdoing in questions of the organization and performance of alternative service.

The concept embodies a new principle altogether. The numerical composition of the army and its structure cannot be constant from year to year; they must correspond to the military-political conditions in the region. Specialists have calculated that the optimum strength of the regular army is 10,000.

Judging by the report, the intentions of the leadership of the Ministry of Defense are serious. But the practical implementation of the plans is being impeded by the absence of a proper legislative base. Let us hope that the new parliament will settle the arrears of its predecessor.

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